

Port of SAN FRANCISCO Piers 80-96



Maritime Eco-Industrial Center STRATEGY



ENVIRONMENT
JOBS
CARGO & INDUSTRY



March 2016

Maritime Eco-Industrial Center

The Port defines the Maritime Eco-Industrial Center as an area that co-locates maritime industrial uses to enable product exchange, optimizes the use of resources, incorporates green design and green technologies on-site, fosters resource recovery and reuse, provides economic opportunities that employ local residents, minimizes environmental impacts and incorporate public open space for enjoyment and habitat.

Aerial Photo Looking South

Piers 90-94, Islais Creek, Pier 80, and the Pier 94 Wetlands



Piers 80-96

Maritime Eco-Industrial Center Strategy

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LEGEND

Piers 80-96 Maritime Eco-Industrial Center Boundary

Open Space

NOTE:

THIS DIAGRAM IS FOR ILLUSTRATION PURPOSES ONLY. THE SCALE AND ARE CALCULATIONS ARE APPROXIMATE.

1. SITE SETTING

Piers 80-96 Maritime Eco-Industrial Center Strategy
PORT OF SAN FRANCISCO



2,250

3,000

1,500

375 750

1 | Overview

The Port of San Francisco Piers 80–96 Maritime Eco-Industrial Center (Maritime Eco-Industrial Center) is located on piers and upland properties within the Port's Southern Waterfront area. It is generally bounded by 25th Street on the north, Illinois Street on the west and Cargo Way on the south (see *Exhibit 1*. Site Setting).

The Maritime Eco-Industrial Center is within southeast San Francisco, extending from Mission Bay to Candlestick Point. This is a dynamic part of the City that is in transition. Most of San Francisco's remaining industrial lands are located in this area, which also has been targeted for new development to increase housing supply and accommodate much of the City's projected economic and employment growth. Since 2001, city planning efforts have focused on preserving key areas for industry, including Port lands, and defining where and how to compatibly allow other land uses, transportation, public infrastructure, and open space. The Port has worked in concert with the City to ensure maritime industrial needs are included in these efforts and to learn of business opportunities that may benefit or complement maritime operations and facilities.

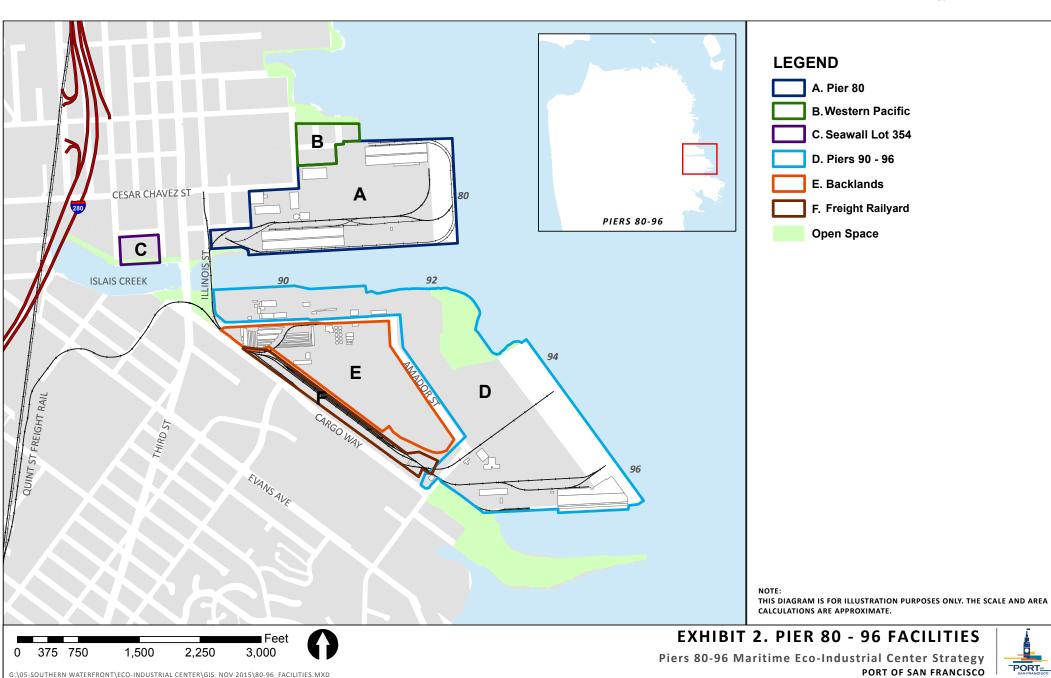
The Port defines the Maritime Eco-Industrial Center as an area that co-locates maritime industrial uses to enable product exchange, optimize use of resources, incorporate green design and green technologies on-site, fosters resource recovery and reuse, to provide economic opportunities that employ local residents, minimize environmental impacts and incorporate public open space for enjoyment and habitat.

This report describes Port community efforts since 2000 that have supported over \$88 million in public and private investments to date, to realize the Maritime Eco-Industrial Center.¹ Through those efforts, the Port has evolved strategies that align maritime cargo business opportunities with complementary industries that improve the environment and community character, produce local jobs, and support investments in new parks and waterfront public access.

The facilities and Piers 80-96 within the Maritime Eco-Industrial Center are shown in *Exhibit 2. Piers 80-96 Facilities*, encompassing the City's remaining cargo shipping terminals, at Pier 80, Pier 92, and Piers 94-96. These terminals straddle Islais Creek, with Pier 80 on the north side, and Piers 90-92 and 94-96 on the south side. The primary cargo facilities, Pier 80 and Piers 94-96, were originally developed for container cargo shipping operations in the late 1960's and early 1970's. Pier 92 is a much smaller facility used for vessel berthing for multiple maritime users. To the west of Pier 92 is Pier 90, a former grain terminal which is no longer in use. The Maritime Eco-Industrial Center includes other industrial properties upland of the piers for cargo storage and staging areas, and support functions, including the 53 acres Piers 90-94 "Backlands" shown in *Exhibit 2*.

From the mid-1990's, container cargo business in San Francisco faded as the Pier 80 and Piers 94-96 terminals were dwarfed by construction of much larger west coast container and cargo facilities, including at the Port of Oakland. In 2006, San Francisco ceased container shipping operations. These changes occurred gradually, and the Port Commission and Maritime Division staff have maintained an active, forward-looking focus on other cargo and industrial business opportunities to adjust and reposition the

Port of San Francisco, Waterfront Land Use Plan 1997-2014 Review Report, June 2015; pp. 105-113



use and economic value of the terminals and backlands. While San Francisco does not offer the vast land area required for modern container operations, its natural deep water berths are valuable assets that have enabled the Port to develop business for non-containerized cargo at Pier 80 and Piers 94-96. Today, Pier 80 functions for "breakbulk" or "project" cargos that often are related to supplying or equipping large industrial facilities or major construction projects. For example, bulk steel, components to rebuild the new Bay Bridge east span, tunnel boring equipment to construct the Central Subway, and production equipment for the Tesla auto plant in Fremont have been received through Pier 80.

In 2000, the Port focused its marketing efforts on "bulk" cargos to import aggregate, rock, sand, and raw materials from British Columbia and mined from the bay, which led to a bulk terminal operating agreement with Lehigh-Hanson at Piers 92 and 94. These cargos serve the construction industry for the production of concrete, asphalt and other construction materials. Given the high volume and wide variety of public and private construction projects in San Francisco and the Bay Area, including transportation infrastructure projects such as the Transbay Terminal, the Port has seen steady growth in maritime bulk cargo volumes. In 2015, the Port received nearly 1.7 million metric tons of aggregate shipped from Canada, which largely has replaced aggregates that used to be supplied from local area quarries. By importing aggregates via ocean vessel, approximately 35,000 annual truck trips have been taken off Bay Area highways and local City streets.

The Port's ability to retain and adapt its facilities to flex with market changes and pivot to bulk cargo business initiated the evolution of the Maritime Eco-Industrial Center. By concentrating its breakbulk business at Pier 80 and focusing on bulk cargo at

Piers 94-96, the construction materials industry was attracted to co-locate next door, to be close to sources of aggregate materials. In the early 2000's, the Port signed leases with two operators, now named CEMEX and Central/Bode Concrete to develop two new state-of-the art concrete manufacturing plants in the Pier 90-94 Backlands. The purchase and use of aggregate and sand imported through the Port's terminal substantially reduced the number of heavy truck trips on highways and City streets. The modern plants include controls to reduce particulate and air emissions, and capture and manage stormwater for reuse in the concrete production process. New facilities have improved the neighborhood appearance of the Port, provided a good source of living-wage, blue collar jobs for City and local residents. These long-term improvements enabled the Port to invest in public open space improvements that are sited and designed to co-exist well with industrial business, and enhance the Bayview Hunters Point neighborhood.

The Port Commission and staff have worked closely with the maritime and Bayview Hunters Point communities, and the Port's own Southern Waterfront Advisory Committee (SWAC) and Maritime Commerce Advisory Committee (MCAC) to achieve the economic, community, environmental and public benefits to date. The Port leases facilities to other recycling operators and businesses which also contribute to resource recovery and reuse objectives within the Maritime Eco-Industrial Center. Not all of the Port's lands are under lease, and there are more opportunities for business collaboration and development that also track with broader City land use, economic and environmental objectives. Over the last twelve years, Port community planning efforts have identified additional Maritime Eco-Industrial Center strategies to further the plan.



The Port is now focused on leasing and implementation of these strategies, guided by the following goals:

- Market Port terminals for ocean-borne cargoes and adjacent lands for business activities that foster synergies with industries in the Maritime Eco-Industrial Center; and promote resource recovery, reuse and exchange;
- Provide economic development opportunities for local and minority businesses and residents within the community;
- Conduct Port and Port tenant operations in a manner that minimizes impacts or improves environmental Conditions in the area;
- d. Provide public realm and open space improvements and complete the Blue Greenway projects; and
- e. Invest in and improve transportation access to the site.







2 | Setting & Planning Context

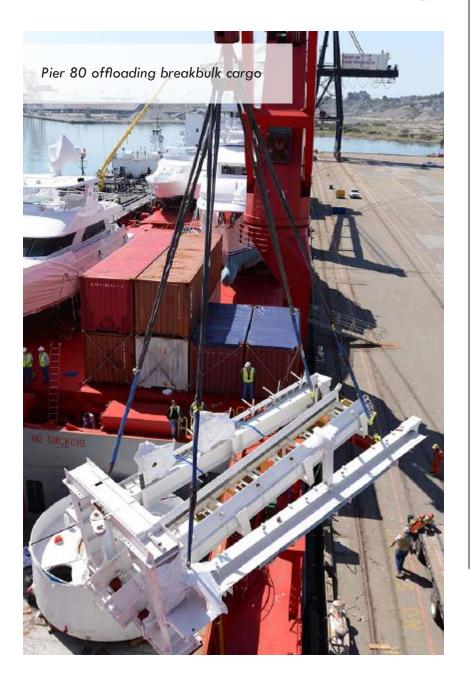
The Port of San Francisco manages 7½ miles of piers, waterfront and upland properties that stretch from Fisherman's Wharf to India Basin. The Maritime Eco-Industrial Center is located at the southernmost end of the Port's jurisdiction. Cargo shipping is a fundamental purpose and mission of the Port, an industry that gave rise to San Francisco's development as a major west coast city and today is the core of the Maritime Eco-Industrial Center.

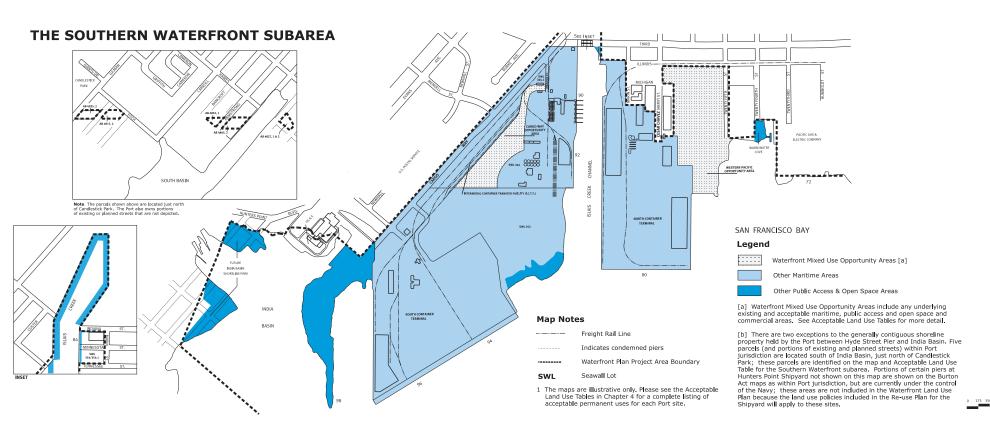
As with many industries, the cargo shipping business is dynamic. Economic, market and technology changes have driven many innovations and new business development. The Port has charted and managed its cargo terminals at Piers 80, 92 and 94-96 through many cycles and ups and downs of the market place, targeting a wide variety of maritime business prospects. The conversion of the Pier 80 and Pier 94-96 container terminals to breakbulk and bulk cargo shipping, as described in Chapter 1, are a reflection of the Port's efforts to continue to evolve and adapt within this climate of change.

The Maritime Eco-Industrial Center is comprised of the following facilities (see: Exhibit 2. Piers 80-96 Facilities):

Pier 80 Breakbulk Terminal An approximately 69 acre facility, with 4 deep water berths currently used for non-containerized cargoes, primarily related to the building industry, including the import of steel and large machine parts.

Western Pacific Site An 8.5 acre open lot adjacent to the north of Pier 80, and bayward of the Muni Metro East Maintenance Facility, used for back up storage, assembly and staging for cargo business, and light industrial interim uses and parking.







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EXHIBIT 3. WLUP SOUTHERN WATERFRONT SUB-AREA

Piers 80-96 Maritime Eco-Industrial Center Strategy
PORT OF SAN FRANCISCO



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Seawall Lot (SWL) 354 An 3.4-acre site currently leased to the San Francisco Municipal Transportation Agency to support their bus and motor coach operation.

Pier 90 A 7.5-acre grain terminal which is no longer active. The Port worked with the Arts Commission to implement the Bayview Rise public art and light installation on the western grain silo. The Port maintenance yard is located on a portion of the site.

Pier 92 A 20-acre facility with a 1,700 foot long berth used by CEMEX and Central/Bode Concrete batch plants and Darling. Darling recycles food oils and fats received from local restaurants and businesses and exports tallow via rail to the US and ship to Asia.

Piers 94-96 Bulk Terminal A 76-acre site are used to import aggregate to support the concrete batch plants at Piers 92 and infrastructure projects throughout San Francisco. Pier 96 is also used to berth Maritime Ready Reserve ships and is home to the City's Blue Bin and commercial recycling facility.

Backlands A 53-acre site used for a variety of eco-industrial uses including Darling tallow operations, Recology sustainable crushing concrete recycling, concrete batch plant parking, Building Resources recycling center and personal storage areas.

Intermodal Cargo Transfer Freight (ICTF) Rail Yard The Port's freight rail yard which handles all Port freight rail operations and includes a distribution and loading area for contaminated soil exported from the City.

Waterfront Land Use Plan

The Waterfront Land Use Plan (Waterfront Plan) sets forth the Port's land use policies for all properties under its jurisdiction, adopted in 1997. Policies pertaining to the Maritime Eco-Industrial Center prioritize cargo shipping and support maritime uses for most of the area, including the existing piers, and expansion areas extending into the backlands. (see Exhibit 3. Waterfront Land Use Plan Southern Waterfront Sub-Area). The Waterfront Plan also allows interim use leases terms of up to 30 years that do not forgo or conflict with maritime operations, given that much of the expansion area is unimproved land that may require longer amortization periods. The Waterfront Plan does identify a Cargo Way mixed use opportunity site next to the freight rail yard that is surplus to cargo shipping needs, which allows complementary industrial development. Many of the Maritime Eco-Industrial Center strategies discussed in this report align with the Waterfront Plan objectives although their implementation could take form in different site configurations.

Pier 80-96 Planning History

After adoption of the Waterfront Plan, the Port began its efforts to make improvements in the Southern Waterfront, including the Pier 80-96 area. Those early efforts included the conversion of Pier 94 from container to bulk cargo and creating opportunities for the construction materials industry, and development of the Illinois Street Bridge to improve freight rail and intra-terminal transportation access between Piers 80 and 94. The leases and improvements to implement these changes occurred from 2001 to 2006, following completion of the Southern Waterfront Final Supplemental Environmental Impact Report ("SEIR") by the San Francisco Planning Department.





The success of these efforts led to further community collaboration between the Port, SWAC, the MCAC, local neighborhood groups and advisory groups to the former Redevelopment Agency to plan for more maritime industrial improvements, but with a more conscious focus on the principle of eco-industrial development. The concept of a Maritime Eco-Industrial Center focuses on colocating industrial uses to enable product exchange, optimize use of resources, incorporate green design and green technologies on-site, foster resource recovery and reuse, to provide economic opportunities that employ local residents, minimize environmental impacts and incorporate public open space for enjoyment and habitat.

In 2007, the Port conducted a Piers 90-94 Backlands planning study which identified challenges for improvement of the Backlands area. The planning work included detailed economic feasibility analysis of new warehouse construction in the undeveloped Backlands for cargo and industrial uses. The analysis determined that such construction was not feasible because the site's un-engineered fill would require pile-supported foundations and utilities that are generally cost-prohibitive for warehouse-based uses. These findings dictated that most of the industrial uses programed for this area should function largely on open lots with limited constructed facilities. The one location where warehouse development could be financially feasible is near the intersection of Amador Street and Cargo Way.

Blue Greenway Open Space Network

Eco-industrial development includes public open space and environmental restoration of natural habitat, including San Francisco Bay. In industrial districts, it often is difficult to site

locations for open space that are compatible. In 2006, Mayor Gavin Newsom formed a Blue Greenway² Task Force to establish a vision to improve and expand the City's public open space and water recreation network through the industrial districts in Southeast San Francisco. The Port led a two and half year public planning process to identify existing and new shoreline open spaces, park connections, and access locations for water recreation activities. The project required broad interagency and stakeholder participation, including Department of Public Works, San Francisco Parks and Recreation, San Francisco Municipal Transportation Agency, Office of Community Investment and Infrastructure, San Francisco Arts Commission, Planning Department, ABAG Bay Trail, California State Parks, San Francisco Bay Conservation and Development Commission, San Francisco Parks Alliance, Bay Access, and a variety of neighborhood groups.

The resulting Blue Greenway Planning and Design Guidelines, published in 2012, identify park locations, street improvements, design and program standards, a way-finding signage and public art program for the entire network, and a funding allocation for Blue Greenway park projects at the Port of San Francisco. The Blue Greenway Planning and Design Guidelines reflect a public consensus of how to create new public access to the shore from land and water, that reinforces the San Francisco Bay and Bay Area Water Trails, and compatibly co-exists with the City's remaining industrial businesses and land uses. The Blue Greenway open spaces, habitat and water access locations developed through this process are incorporated in the Maritime Ecolndustrial Center strategies.

² The Blue Greenway is a City project to complete the Bay Trail and Bay Area Water Trails from Mission Creek to the City southern boundary.



EXHII

Piers 80-96 Maritime Eco-Industrial Center Strategy
PORT OF SAN FRANCISCO



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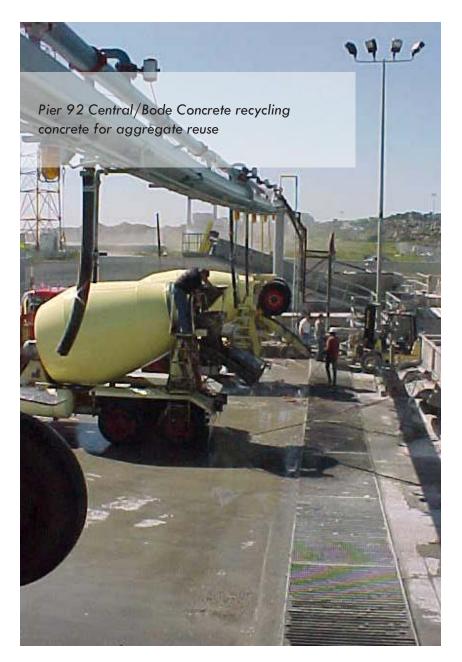
Eastern Neighborhoods Planning

In 2008 the Eastern Neighborhoods Central Waterfront Area Plan was adopted by the City, this plan resulted in a major rezoning of industrial lands for residential uses. The Central Waterfront Plan also established stronger controls for retaining and maintaining areas for Production, Distribution and Repair (PDR) (light Industrial) uses. (see Exhibit 4. Central Waterfront & Bayview Zoning). The Central Waterfront Plan also recognized that the Port lands do and will continue to be used for PDR types of uses in addition to maritime cargo and industrial uses.

Piers 80-96 - 2008 to Present

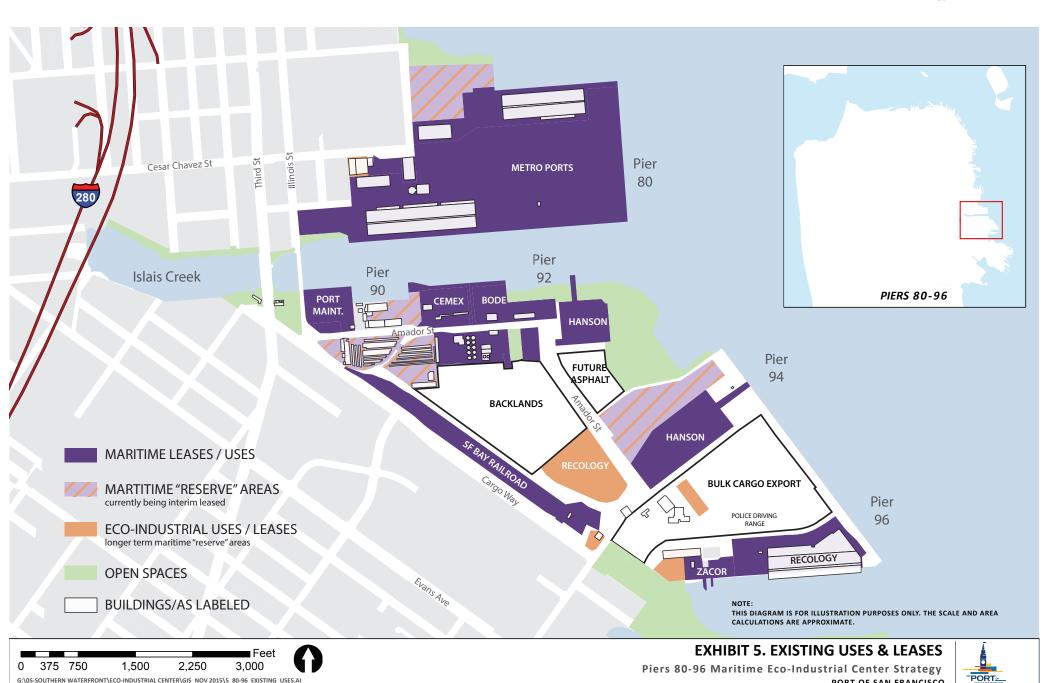
Between 2008 and now, Port staff has continued to work with the Port Commission and stakeholders to present an approach and leasing strategy for the underutilized and or vacant property in the Southern Waterfront. In consultation with area stakeholders, Port staff recommended uses and leasing criteria for these areas, which are consistent with and reinforce the Maritime Eco-Industrial Center strategy.

While much of the planning work to date has led to successful projects, this Plan will document the strategies moving forward to guide the Port's continued success for the Maritime Eco-Industrial Center. Implementation will require initiating environmental review of proposed leasing and maritime development opportunities because surrounding conditions have changed since the adoption of the SEIR.



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3 | Existing & Planned Land Uses

This chapter provides an overview of the Port's existing land uses within the Maritime Eco-Industrial Center, including the tenants and their operations, it also reviews the intent and definition of the Maritime Eco-Industrial Center and the future land uses planned for each of the underutilized sites within the area.

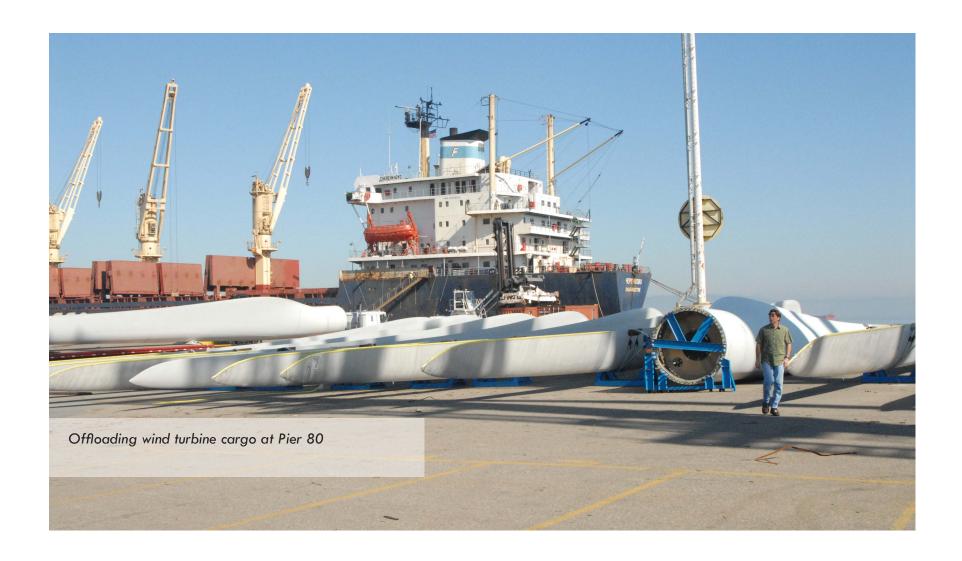
Existing Uses

The Port's Maritime Eco-Industrial Center has a variety of uses which in total comprise the Maritime Eco-Industrial Center and is illustrated in *Exhibit 5*. *Existing Uses & Leases* and Table 1. The uses can generally be organized into eight categories, including:

- Ocean-borne cargo import/export Piers 80, 92, 94, and 96, the Backlands and through the Intermodal Cargo Freight Rail Yard;
- **Bulk material processing** Piers 90 & 92 and in the Backlands;
- Ship Berthing Piers 80 and 96;
- Port and SFMTA maintenance facilities Portion of the Western Pacific site adjacent to Pier 80, Pier 90, and SWL 354;
- Material Recycling Pier 96 and the Backlands;
- Vehicle parking/storage All of the sites;
- Construction laydown Piers 80, 94 and 96; and
- Open Space and Public Art Along Islais Creek, Pier 94 and Heron's Head Park.

Table 1. Existing Piers 80-96 Predominant Uses

	Alaming Field 00-70 Field	1	
Facility	Tenant/Use	Area (acres)	Employees
Western Pacific	Affordable Self Storage	1.7	3
Pier 80	Metro Ports (Cargo Operator)	46	2-15
SWL 354	SFMTA (storage/bus repair)	4	12
601 Cesar Chavez	Rafiki Health Services	0.5	8
Pier 92	CEMEX (concrete batching)	3.4	160
Pier 92	Central/Bode Concrete (concrete batching)	5.5	140
Pier 92	Hanson Aggregates (sand import/processing)	4.5	3
Pier 94	Hanson Aggregates (aggregate import/processing)	10	3
Pier 96	California Sea Lift Command (ship berthing)	1.7	12
Pier 96	Recology (commercial and residential recycling)	9.1	200
Pier 96	Zacor (marine construction)	1	7
Rail Yard	SF Bay Railroad (contaminated soil hauling)	10	12
Backlands	Building Resources (recycled building materials)	0.5	9
Backlands	Aardvark Self Storage	6.3	2
Backlands	Darling (fats recycling/tallow export)	4.5	57
Backlands	Recology (concrete recycling)	10. <i>7</i>	10
	Total	119.4	645



In recent history, the Port's cargo operations tend to support the local economy, imported material is utilized within the Bay area for the building trades and infrastructure construction. Some cargos such as windmills and manufacturing machinery are used within the region, but the Port's imports do not often travel beyond the bay region. However the Port's exports which are largely recycled products such as paper, tallow, plastic, glass and aluminum are exported to other parts of the nation and Asia.

In addition to these uses, there are several smaller tenants, including small office uses at 501 Cesar Chavez, contractor and storage space at the Pier 80 maintenance and repair facility, local trucker parking, opera storage and San Francisco Police Department practice driving range at Pier 96.

Maritime Eco-Industrial Center

The success of the Maritime Eco-Industrial Center has largely been due to the aggressive marketing of both break bulk and bulk cargoes with significant success, primarily as it relates to bulk cargo imports. Shipping sand and aggregate through Port terminals located adjacent to the concrete batching significantly reduced truck trips associated with delivery of raw materials and began the process of co-locating uses that evolved into the Maritime Eco-Industrial Center. This concept was extended by the location of three large recycling operations including the Sustainable Concrete Crushing, Darling and the City's Blue Bin and Office White Paper recycling operations, all of which have synergistic relationships with other uses in the area.

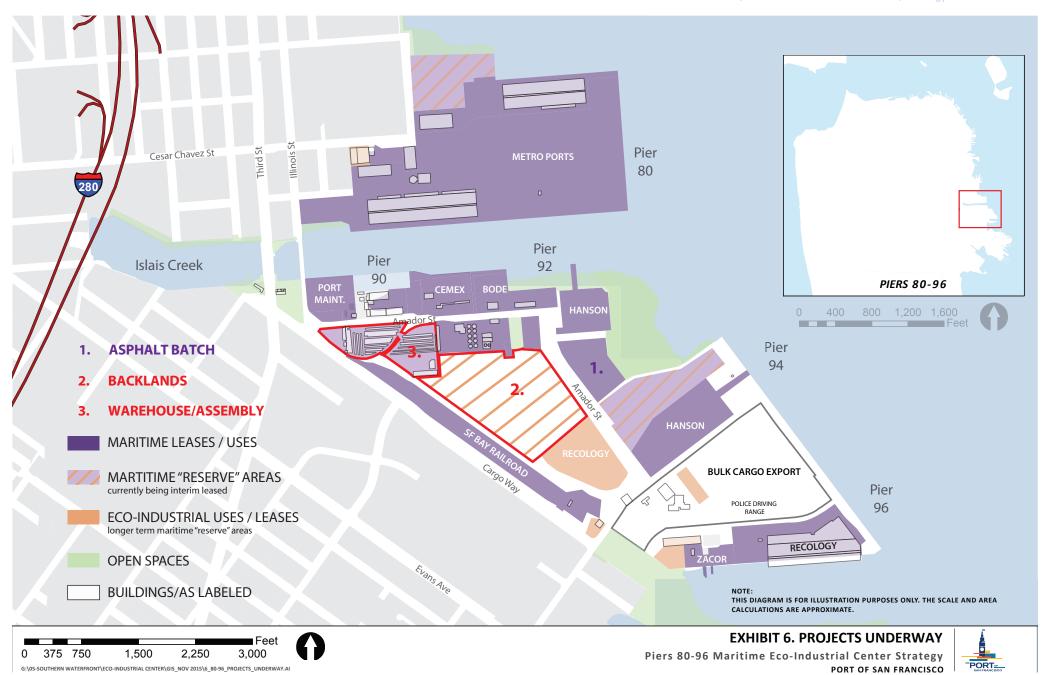
An example of how one element of the Maritime Eco-Industrial Center functions is to follow the trail of product use and reuse, such as: Hanson Aggregates imports sand and aggregate by vessel at Pier 94, which is then trucked by local truckers and used by Central/Bode Concrete and CEMEX at Pier 92 to produce concrete. Both Central/Bode Concrete and CEMEX produce waste concrete that is delivered to Sustainable Crushing, which crushes it for reuse by Central/Bode Concrete in non-structural concrete which can be re-batched in the concrete plants to build sidewalks, curbs and gutters. Both Central/Bode Concrete and CEMEX use harvested rain water on site in their concrete production, and manage excess storm water run-off through landscape swales. Darling renders tallow from collected restaurant grease and animal fats for shipment to Asian and North American markets. Darling may convert this facility for bio-diesel production for use within the City.

The other elements of the Maritime Eco-Industrial Center are to provide economic development and local employment for the community, minimize impacts on the environment and to beautify and create open space and wildlife habitat where possible. Each of these elements are addressed in the Port's Southern Waterfront Community Benefits and Beautification Policy³ adopted by the Port Commission and are further described in the Public Realm & Open Space and Economic Development & Community Benefits chapters of this Plan.

Emergency Response

Because of the unique conditions and location of the Pier 80-96 area, the Port's Backlands area has been designated a site to support disaster response. The large areas of open land in the Backlands, adjacency to Sustainable Crushing for crushing services, and access to waterborne goods movement and freight rail access

³ See: Port's Southern Waterfront Community Benefits and Beautification policy http://www.sfport.com/ftp/uploadedfiles/meetings/supporting/2007/Item10aAttachmentPolicyforSouthernWaterfrontBeautification(1).pdf



make this location ideal should there be a need to stockpile and process debris for export out of the City. The Port's lease agreement with Sustainable Crushing reserves the right for the City to obtain preferential use of equipment to support disaster.

Future Uses

In the last 15 years the Port has made significant strides in new leasing and increased cargo imports to establish the success of the Maritime Eco-Industrial Center. Looking forward, the Port continues to pursue opportunities to continue the Maritime Eco-Industrial Center strategy and expand the success.

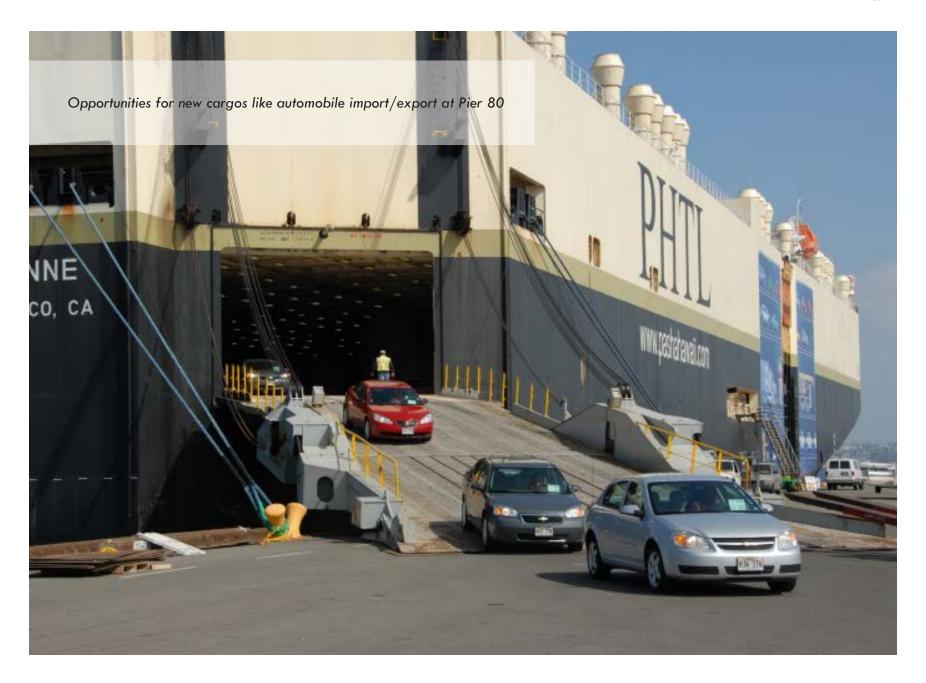
The Port is currently implementing three large projects to support new leasing and cargo that will improve the remainder of Pier 92 and the Backlands and the functionality of the Maritime Ecolodustrial Center, including: 1) partnering with the City's Public Works Department on the construction and operations of an asphalt batch plant for the City's street repair projects that utilizes a high percentage of recycled materials processed on site; 2) improvements to 17 acres of the Backlands to accommodate the high demand for construction laydown, vehicle storage, recycling and similar types of uses that support the local economy; and 3) construction of an approximately 100,000 square foot building on Amador Street in the Backlands to support maritime and industrial warehouse/assembly and support commercial uses (see Exhibit 6. Projects Underway).

In addition to the three projects described above, the Port continues to pursue additional leasing and cargo operations. The following describes each of the cargo facilities and the cargo types being pursued:

Pier 80 is an approximately 69 acre facility that currently imports break-bulk cargoes, primarily related to the building industry, including the import of steel and large machine parts. It has 4 deep water berths. The facility has capacity for more imports and/or exports. Commodities that have recently been considered to be viable include:

- auto import for local distribution not reliant on the need for freight rail distribution;
- auto export for vehicles manufactured in the Bay area; and
- Increased break bulk cargoes such as structural steel
 or large machine parts such as brewing equipment,
 infrastructure equipment such as electrical transmission
 cables and other items to support the substantial
 construction occurring in the Bay Area.

The Port Commission and Maritime Division also are focused on business development for Pier 80, which can accommodate a variety of cargos. Pier 80 is well-suited for break bulk steel, and "project" cargos for specialized equipment such as wind turbines, tunnel boring equipment for the Central Subway, production equipment bound for the Tesla auto plant in Fremont. But these cargos are episodic, and dictate efforts for further business development. The Port, in partnership with the International Longshore and Warehouse Union (ILWU), currently is in negotiations for the import and export of automobiles through Pier 80, on "roll-on/roll-off" ships. These operations also could include auto equipment installation and detailing services, providing a new source of industrial jobs in addition to increased employment for the ILWU and community.



Pier 96 is an approximately 35 acre facility with 2 deep water berths. This facility has the potential to be reinvigorated for cargo goods, specifically bulk cargoes.

The Port has spent considerable time investigating the opportunity to improve the Pier 96 facility to support bulk export of iron ore for the China market and demand. Iron ore would be delivered to the Port by Union Pacific via the Caltrain rail corridor. Improvements to support the bulk cargo export operation include expanded ICTF freight rail yard storage, Pier 96 upgrades including site stabilization, enclosures and berthing improvements and improvements to the Caltrain rail line as required by Union Pacific. The analysis determined the project was feasible however since that time the market for the iron ore has dropped significantly and has made it uneconomical. Since that time the Port has been approached about the opportunity for grain export, suggesting that opportunities exist for bulk cargoes.

Both Piers 80 and 96 offer great opportunities for niche cargo markets and once utilized, would provide considerable revenue and opportunities for the Port, City and adjacent communities. The Port has learned that there are challenges to advancing the opportunities such as iron ore export, including:

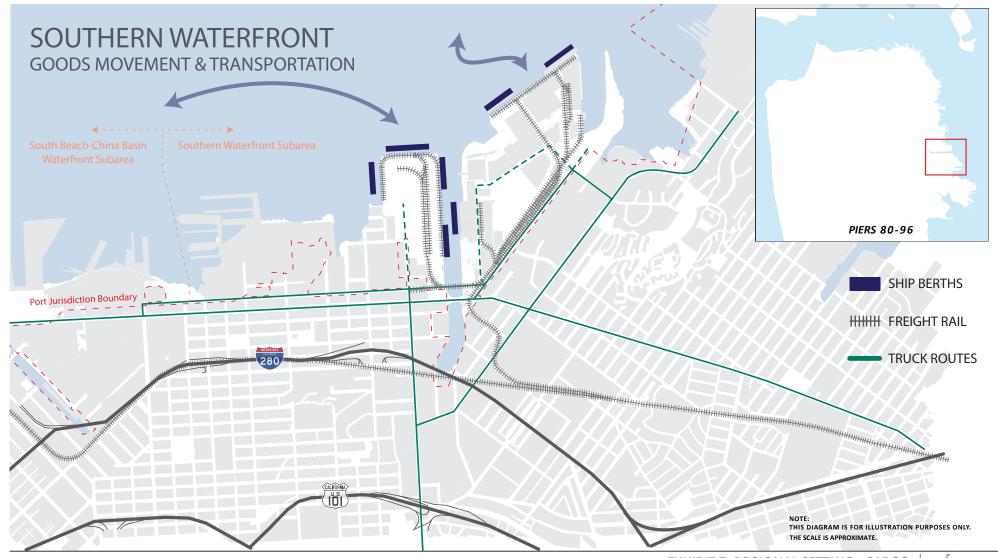
- Fluctuations in the global bulk material market;
- Lack of a critical mass for backland storage;
- Geotechnical constraints with the engineering and bay fill pier design;
- Labor cost and efficiencies lost by lower cargo volumes;
- Increasing limitations to operational windows for access on and physical barriers to the Caltrain rail line for freight goods movements;
- Environmental considerations in the context of industrial port operations and the adjacency of the urban neighborhoods of San Francisco.

In addition to the Piers 80 and 96 cargo facilities, the Port's 10-Year Capital Plan includes the eventual demolition of the Pier 90 grain terminals, which have not been used for more than 20 years. This project will provide an opportunity to potentially expand the berthing opportunities along Islais Creek through removal of the pier conveyor system. The site of the grain silos may have geotechnical characteristics that can support a warehouse type structure to support light industrial or cargo operations.

Land Use & Leasing Improvement Strategies

The following strategies will support the Maritime Eco-Industrial Center:

- Market Port cargo facilities to maximize their capacities and for cargoes that support the Maritime Eco-Industrial Center;
- Implement the three priority projects, including the asphalt batch plant, Backlands improvements and leasing and the Amador Street warehouse/fabrication space; and
- Identify new interim leasing opportunities or physical improvements that can be a part of, or support, the site.



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EXHIBIT 7. REGIONAL SETTING - CARGO

Piers 80-96 Maritime Eco-Industrial Center Strategy
PORT OF SAN FRANCISCO



4 | Transportation & Goods Movement

This chapter reviews the transportation and access modes for the Maritime Eco-Industrial Center including those required to support goods movement and public transit. Bicycle and pedestrian access improvements are described in Chapter 6, Public Realm & Open Space.

Access to the local and national road networks and to berthing facilities that support waterborne goods movements is critical to the success of the Maritime Eco-Industrial Center. Public transportation, bicycling and walking for workers and visitors to the area further supports the sustainability principles of the concept.

Goods Movement

The Maritime Eco-Industrial Center is centrally located not only on the Bay for quick and easy access for waterborne cargoes coming in from Asia and South America, but is also located within one mile of US 101 and 280 (see *Exhibit 7. Port Regional Setting-Cargo*). The Port is serviced by Union Pacific for freight rail access, which also provides access to the national freight rail network.

The Port of San Francisco does not have the infrastructure or locational advantages to compete with the Port of Oakland for large scale container shipping operations; however, it does serve and have opportunities for niche cargos that the Port of Oakland does not support.



The Port competes with other area ports that also serve smaller markets, as described below:

- Redwood City Bulk
- Richmond Autos and liquid bulk
- Stockton Bulk and break bulk
- Sacramento Agricultural bulk cargoes and break bulk

The Piers 80-96 terminals include a total of 9 deep water berths for cargo ships, including: a) four berths at Pier 80; b) two berths at Pier 92; c) two berths at Pier 94; and d) one at Pier 96. In addition, Pier 96 has four shallow berths that can support barges and tug vessels.

The Port continues to make significant investments to support goods movement. In 2007, the Port invested \$22 million to construct the Illinois Street intermodal bridge, which provides a



direct connection between the Pier 80 and Piers 90-96 facilities and provides freight rail access to Pier 80. The bridge is used to route truck traffic onto Illinois Street and has significantly reduced vehicle congestion on Third Street. In 2016, the Port through a grant and additional Port capital will upgrade the Quint Street lead which is the freight rail line that serves the Port from the Caltrain main line. This upgrade will improve the track alignment for safety and meet modern standards for freight rail movements and will support future cargo export operations.

Roadways

The Maritime Eco-Industrial Center is well served by the City's road network within the City and access to the state and national highways. The network of roadways serving the Port include:

- Cesar Chavez Street which provides access to I- 280 and US 101
- Jennings/Evan Street which provides access to I-280 and US 101
- Illinois Street which is the City's north-south truck route providing local access to downtown
- Third Street, which is the City's truck route for southbound local traffic
- Cargo Way, which is the primary local street providing access to Pier 96 and the intermodal freight rail yard
- Amador Street, which is an internal street serving Piers 90-96

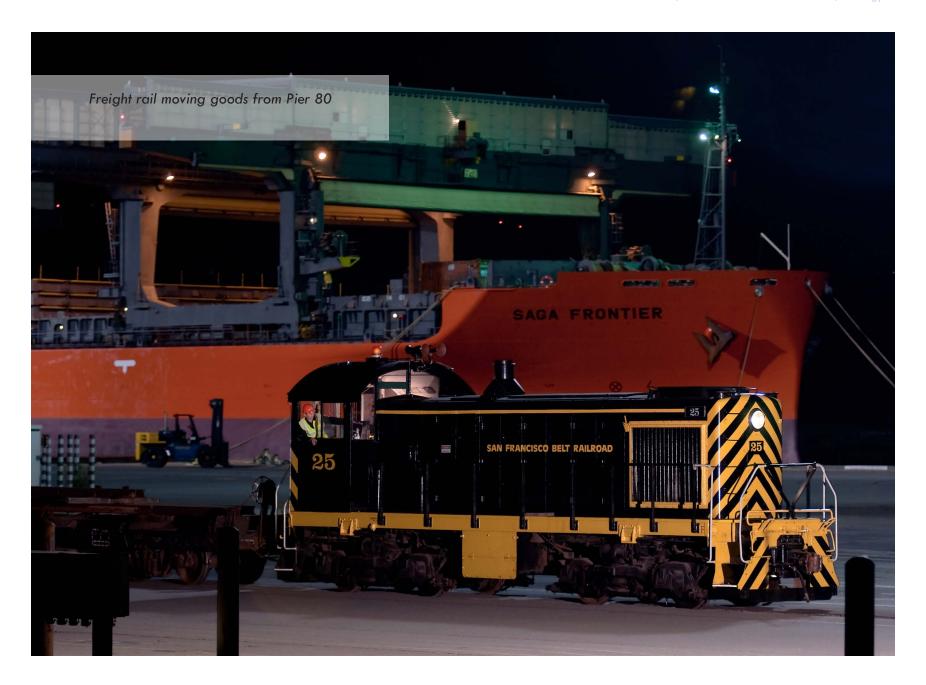
All of these roadways are generally in good condition with the exception of Cargo Way and Amador Street, each of which need major rehabilitation. Cargo Way is a City street with repair and maintenance responsibility by San Francisco Public Works ("Public Works"). The Port in conjunction with Public Works and the Office

of Community Investment and Infrastructure (OCII) developed a concept plan to totally reconstruct Cargo Way to meet modern standards. These upgrades are scheduled to be completed as a component of the Hunters Point Shipyard Candlestick Redevelopment project. Amador Street is a Port street with repair and maintenance being the responsibility of the Port. The Port will be analyzing the feasibility and cost to repair or reconstruct Amador Street. This work would be coordinated with the SF Public Utilities Commission who has water and sewer infrastructure in the roadway and Public Works who will become a major user of the street to access the future asphalt and concrete batch plants servicing their projects.

Public Transit

The Piers 80-96 is well served by public transit for employees and visitors to the area. The following is the public transit that serves the site by the City's Municipal Transportation Agency (MUNI):

- The T-Line Light Rail line runs along Third Street with stops at Marin Street and Evans Streets, with trains running every 10 minutes or less, up until 1:30 AM. The T-Line Light Rail connects the area to Bayview Center, downtown, BART and Caltrain (when the Central Subway is completed, service will be every 7 minutes with two car trains);
- The 19 Bus line runs down Evans Street to and from downtown with stops at Third and Jennings Street; and
- The 44 Bus line runs down Evans Street and connects with BART via Bayview Center.



As noted earlier, the Maritime Eco-Industrial Center also is designated as an area reserved for emergency response. Its sites attributes including access to multiple methods of transportation make it an ideal site should the need arise.

Transportation & Goods Movement Strategies

The following strategies will be pursued to support the Maritime Eco-Industrial Center:

- 1. Implement the Quint Street lead freight rail improvements;
- 2. Continue to work with Union Pacific and the Caltrain Joint Powers Board to maintain operational time frames for freight and invest in required improvements along the rail corridor to support improved freight rail service;
- 3. Coordinate and work with the City to implement the Cargo Way improvement project; and
- 4. Reconstruct/repair Amador Street to support existing and future Port operations.





5 | Environmental Stewardship

One of the Port's mandates is to protect natural resources. This mandate can be difficult in a maritime and industrial setting by the very nature of industry operations. The Port has taken great strides to protect its natural resources including flora and fauna and to minimize potential impacts to human health. One of the basic principles of the Maritime Eco-Industrial Center is to minimize impacts on the environment. A significant element of the Maritime Eco-Industrial Center is the onsite recycling of a variety of products, which in some cases are used as a source product for another adjacent industry. This closed loop system eliminates natural resource waste, miles traveled and air emissions.

There are nine primary environmental principles that are utilized in the Maritime Eco-Industrial Center. The below describes them and provides example of how they are utilized:

1. Recycle and reuse material on site and minimize waste Sustainable Crushing crushes the City's concrete waste, including from nearby batch plants. The resulting recycled aggregate and sand is used by the batch plants for feed stock for non-structural concrete. Once the asphalt plant is constructed, allowing for on-site recycling of used asphalt, this principal will be expanded. This closed loop will reduce truck trips that currently transport asphalt waste from San Francisco projects to South San Francisco and also transport asphalt from Brisbane and South San Francisco for use in San Francisco. Asphalt recycling and production will instead occur at the Port, saving thousands of vehicle trip miles.

2. Reduce travel distances and maximize efficiencies in goods movement

Sand and aggregate used in concrete production are brought to the Port by ships. Each ship eliminates over 3,600 truck trips from the Bay area roads and reduces air emissions. Contaminated soil from San Francisco construction projects is hauled by trains to regulated landfills; each train carries 60 rail cars, for each train 300 trucks are eliminated from Bay area roadways. One recent project alone saved more than 86,000 gallons of fuel, which equates to 2 million tons of CO2 emissions being eliminated.

3. Encourage use of public transit, walking and bicycling Bicycle and pedestrian improvements within the area make it easier and safer to get to the site and provide recreational opportunities. Recent improvements include a class 1 protected bicycle facility on Cargo Way and Illinois Street bike lanes. The Bayview Gateway project includes pedestrian improvements such as new and enhanced crosswalks

4. Reduce water consumption and capture rain water for industrial use

Both concrete batch plants on Port property harvest rain water and use it for concrete production, reducing the use of potable water (when there is rain). Sustainable Crushing utilizes recycled water for dust control.

* Disclaimer: The inundation maps and the associated analyses are intended as planning level tools to illustrate the potential for inundation and coastal flooding under a variety of future sea level rise and storm surge scenarios. The maps depict possible tuture inundation that could occur if nothing is done to adapt or prepare for sea level rise over the next century. The maps do not represent the exact location or depth of flooding. The maps relied on a 1-m digital elevation model created from LiDAR data collected in 2010 and 2011. Although care was taken to capture all relevant topographic features and coastal structures that may impact coastal inundation, it is possible that structures narrower than the 1-m horizontal map scale may not be fully represented. The maps are based on model outputs and do not account for all of the complex and dynamic San Francisco Bay processes or future conditions such as erosion, subsidence, future construction or shoreline protection upgrades, or other changes to San Francisco Bay or the region that may occur in response to sea level rise. For more context about the maps and analyses, including a description of the data and methods used, please see the Climate Stressors and Impacts Report: Bayside Sea Level Rise Inundation Mapping Technical Memorandum, June 2014.

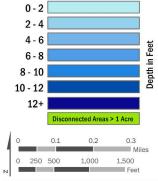
PORT OF SAN FRANCISCO Inundation Mapping

MHHW + 52" SEA LEVEL RISE

SLR + STORM SURGE SCENARIOS LISTED BELOW COULD BE APPROXIMATED BY THE INUNDATION SHOWN ON THIS MAP. FOR FUTHER INFORMATION, SEE TO19 - CLIMATE STRESSORS AND IMPACT: BAYSIDE SEA LEVEL RISE MAPPING TM, JUNE 2014.

42" SLR + 1-YEAR STORM SURGE 36" SLR + 2-YEAR STORM SURGE 30" SLR + 5-YEAR STORM SURGE 24" SLR + 10-YEAR STORM SURGE 18" SLR + 50-YEAR STORM SURGE

12" SLR + 100-YEAR STORM SURGE



Areas to add short perimeter protection barriers

Exhibit 8
City's Piers 80-96 Area Projected
2050 Sea Level Rise

Page 4 of 4

5. Reduce stormwater flows to the Water Treatment Facility and treat storm water naturally

The Piers 90-96 area has nearly eliminated all storm water flows to the Southeast Water Treatment facility; instead, rainwater is harvested for use, filtered through use of permeable paving, or is directed to landscape swales, which treats the stromwater prior to directing it to the Bay. The landscape swales also provide area beautification and habitat.

6. Use and incentivize the use of state of the art diesel engines

The Port offers incentives to its tenants to modernize their diesel truck fleets or to add aftermarket controls to help reduce emissions. San Francisco Bay Railroad uses biodiesel for its short-haul locomotives.

7. Minimize air emissions and fugitive dust

Each of the tenants that processes or handles, sand, aggregate or recycled concrete are required to monitor and control fugitive dust. This is typically accomplished through the application of water or other surfactants. The closed loop recycling system in the Maritime Eco-Industrial Center minimizes vehicle miles traveled which reduces area emissions.

8. Enhance and restore wetlands habitat

The Port has worked to create and restore wetlands within the Piers 90 - 96 area, including partnering with the San Francisco Audubon Society on creating and restoring a 3 acre wetland at Pier 94. The Port created 8 acres of natural areas within Heron's Head Park. These areas

provide critical habitat area for numerous species of birds and other critters and improve the health of the Bay.

Create new habitat and open space where opportunities exist

Chapter 7 describes how the Port has invested significantly in the expansion of its open space, not only for recreational purposes, but also in the creation of habitat and natural areas. As a part of the Blue Greenway, the Port has plans to continue to expand and improve it open space system.

Each of these principles has multiple benefits, many of which are interrelated to one another.

Sea Level Rise

The Maritime Eco-Industrial Centers are the Port's newest pier facilities and as such are able to accommodate current sea level rise projections the City has established, with relatively minor investment in a few strategic locations. The Port and City anticipate that there will be a range of sea level rise from approximately 11" up to 24" by 2050. Solutions to address protecting Port and City assets within the Maritime Eco-Industrial Center through 2050 would include constructing short perimeter flood protection barriers at low points at key locations (See Exhibit 8. City's Piers 80-96 Projected 2050 Sea Level Rise). However these improvements would only be temporary until the City and Port define the long term solution.





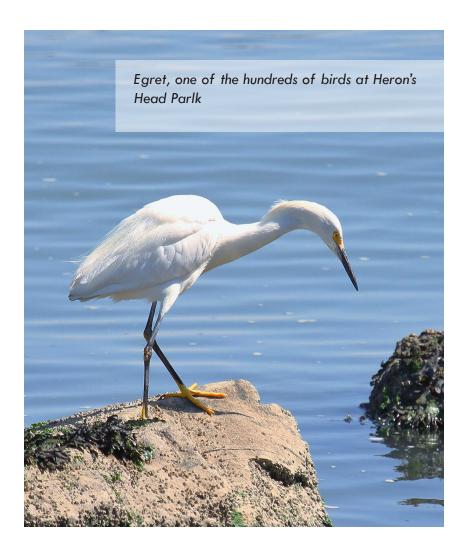


Environmental Strategies

The following strategies will be pursued to support the Maritime Eco-Industrial Center:

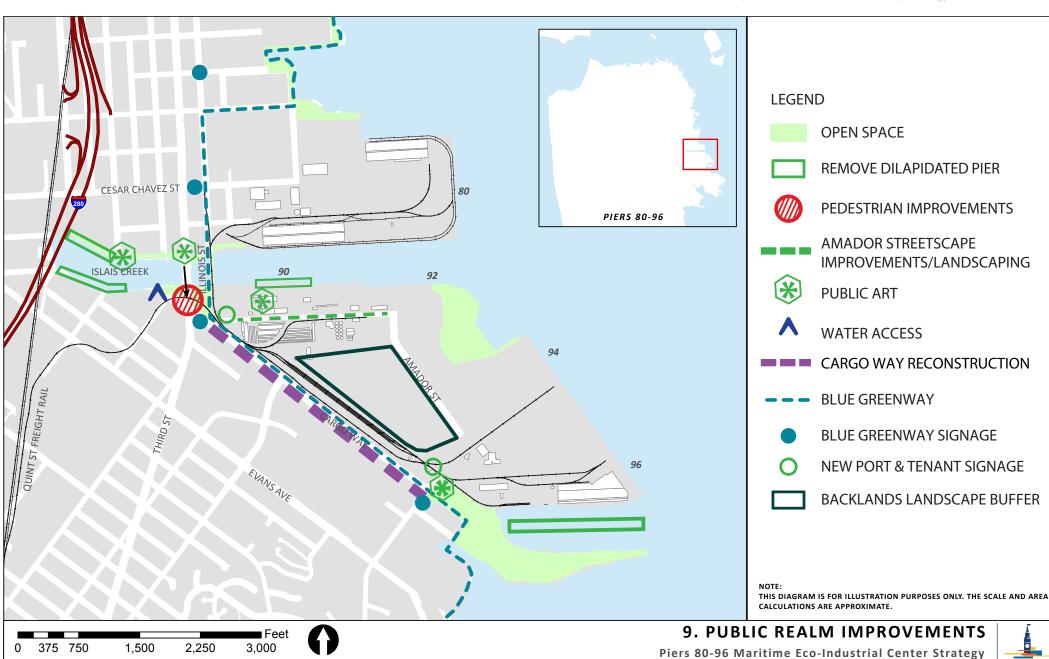
- 1. Recycle and reuse material on site and minimize waste;
- 2. Reduce travel distances and maximize efficiencies in goods movement;
- 3. Encourage public transit, walking and bicycling;
- 4. Reduce potable water consumption and promote industrial use of rainwater and recycled water;
- 5. Reduce stormwater flows to the Water Treatment Facility and treat storm water naturally;
- 6. Use and incentivize the use of state of the art diesel engines;
- 7. Minimize air emissions and fugitive dust;
- 8. Enhance and restore wetlands habitat;
- 9. Add open space where opportunities exist; and
- 10. Account for sea level rise in capital future capital investments and pursue options to defend against projected 2050 impacts

An example of the 4th strategy in this list would be installation of purple pipe in Amador Street to deliver recycled (non-potable) water to support industrial operations in the area, including watering material piles and batching concrete.



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PORT OF SAN FRANCISCO



6 | Public Realm & Open Space

The Bay setting of the Maritime Eco-Industrial Center and the Blue Greenway provide for a rich opportunity of open space types and experiences. While public access, parks and open space are not typically compatible with industrial maritime facilities for safety and security reasons, the Port has developed and has plans for a system of pedestrian bicycle and open space improvements that will provide enhanced public access while maintaining a buffer with maritime industries.

Over the last several years the Port has invested significantly in the public realm including creation of new open spaces and improvements to existing open spaces, new public art, pedestrian and bicycle facilities and landscape stormwater treatment swales, all of which have improved the appearance of the area. There are additional opportunities to expand and improve the public realm system. Exhibit 9. Public Realm Improvements highlights the system of improvements that exist and those planned. The following briefly describes the system of improvements, both existing and planned.

Parks & Open Space

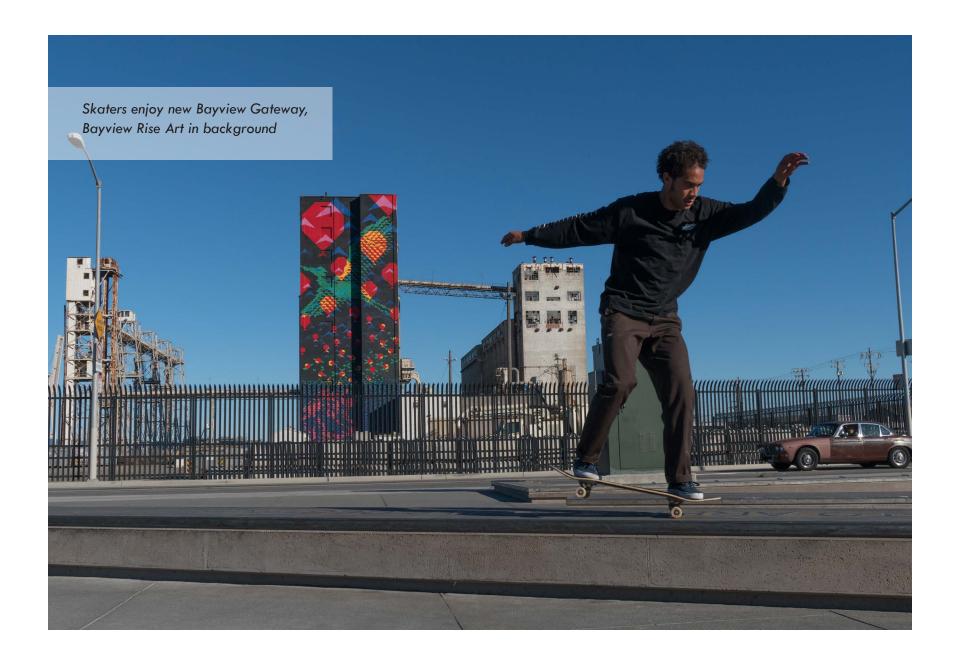
The Maritime Eco-Industrial Center area has a variety of open spaces and programs ranging from small connector parks (Tulare Park) to the Port's largest open space Heron's Head Park, the spectrum of programming ranges from small boat launches to access to the Bay, and skateboarding, to tidal wetlands habitat. Table 2 lists the open spaces, size, and general program.

Pedestrian, Bicycle and Public Art

In addition to the parks and open spaces, the sidewalks, bicycle facilities, public art and wayfinding completes the system of the public realm.

Recent improvements include the Bayview Rise public art on the Pier 90 grain silos, bicycle lanes on Cargo Way and Blue Greenway wayfinding. Future projects to be completed include: a) additional cross walks and pedestrian facilities at the intersection of Illinois, Amador and Cargo Way; b) Cargo Way pedestrian and bicycle amenities including a landscaped multi-use pathway; c) additional public art at Bayview Gateway; d) temporary art at Heron's Head Park; e) Port and Port tenant wayfinding at key Port entry locations; and f) improvements to the Backlands that will include landscape stormwater treatment swales, which provide habitat and beautification. The Port requires that all new tenants provide landscape improvements to the perimeters of their lease areas visible from adjacent public ways.





Upgrade for ADA and site furnishings

Public Realm and Open Space Improvement Strategies

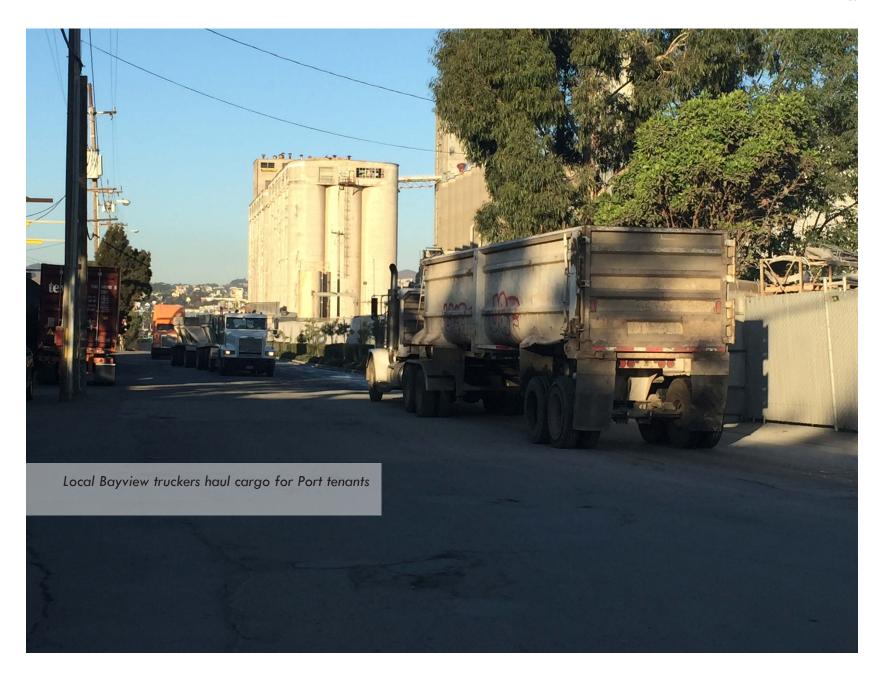
The following strategies will be pursued to support the Maritime Eco-Industrial Center:

- Coordinate with Public Works and OCII on implementation of the Cargo Way redesign and landscape, pedestrian and bicycle improvements;
- 2. Improve Amador Street with landscaping and stormwater treatment systems;
- 3. Complete the Islais Creek open space improvements;
- 4. Design and construct the Port and Port tenant signage program;
- 5. Complete the Bayview Gateway public art project;
- 6. Promote and encourage temporary art at Heron's Head Park; and
- 7. Implement tenant drought-resistant landscaping as a condition of new leases.

Table 2. Open Spaces, Size, and General Program

	Waterfront Park Name	Size	Activity & Program
а	Islais Creek Promenade	Х	plaza, skateboarding
b	Tulare Park	7,500 sf	connector park, sitting
С	Islais Landing	25,000 sf	native plantings, non-motorized boat access
d	Bayview Gateway	51,000 sf	fishing, plaza, art interpretation, skateboarding
е	Pier 94 Wetlands	8.2 acres	habitat, wetland, restoration, bird-watching
f	Heron's Head Park	21 acres	habitate, wetlands, bird- watching, picnicking, Eco Center
	Future Open Spaces		
g	Warm Water Cove Expansion	expand park to south by 2 acres	
h	Islais Creek Promenade Extension	connect existing promenade to Third Street	

i Tulare Park Redesign



7 | Economic Development & Community Benefits

A major benefit of the Maritime Eco-Industrial Center is the economic benefits to the community, City and Port, the area accounts for 829 jobs and nearly \$8.7 million in annual revenue to the Port. These job and revenues are based on the direct revenues and employment within the area, the economic multiplier effect for the City is estimated that these uses create an additional 497 jobs within the City and \$1,827,000 in expenditures and revenue.

The Port through its leases and as outlined in the Southern Waterfront Beautification and community Benefits Policy requires its tenants to hire from within the community and to utilize local businesses to support its businesses operational needs.

- Leases that involve transportation include a "local trucker provision", which requires businesses that contract for material hauling to utilize at least 60% of their trucking needs through the use of certified Local Business Enterprises (LBE) truckers.
 Existing tenants exceed this target, with percentages ranging from 80 -100% use of local truckers.
- The leases for Recology's Recycle Central/Bode Concreteand Sustainable Crushing operations require that these firms give hiring preference to those that live within the 94124 Bayview zip code. Of the 210 employees, more than 90% were hired from the Bayview community. In addition to recruiting from the neighborhood, Recology offers basic job training and life skills that allows easier entry into the work force.

 The Port also provides vehicle parking for local truckers to store their vehicles and equipment, which lowers their cost of doing business.

In addition to Port tenant requirements, the Port has been working with local contractors to encourage the bidding and securing of Port construction contracts and to provide opportunities for Bayview and minority business to bid on commercial and retail business opportunities. Efforts to solicit and utilize local contractors include:

- Outreach to neighborhood and minority based Chambers of Commerce;
- Creating smaller bid packages so smaller local contractors can bid;
- Early outreach to local and minority contractors;
- The City opening four contract bid offices within the Bayview for easy access to small local contractors;
- Partnering with the SFPUC on training programs for small business owners/contractors;
- Participating and tracking the City's new mentor-protégé program that connects; large contractors with small contractors to facilitate training on how to work with the City/Port;
- Bidding jobs through the use of micro-Local Business Enterprise set aside contracts for minor construction projects; and
- Strategically offering commercial and retail opportunities focused on small local and minority business owners.

New leases and development opportunities will include the same provisions that existing tenants are required to provide. As opportunities arise for new business opportunities, the Port will work to offer opportunities for local and minority businesses.



Economic Development Strategies

The following strategies will be pursued to support the Maritime Eco-Industrial Center:

- 1. Continue to implement the Southern Waterfront Community Benefits and Beautification policy;
- 2. Continue to work on increasing the use of local contractors for construction projects;
- 3. Continue to require local hiring in new Port leases;
- 4. Where feasible, structure construction projects or new commercial leasing opportunities to allow small local business to respond to bids or request for proposals; and
- 5. Focus and offer business opportunities for small and minority businesses.







Piers 80-96 Maritime Eco-Industrial Center Strategy PORT OF SAN FRANCISCO



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8 | Implementation Schedule

While much of the Maritime Eco-Industrial Center area is leased, there are many projects that are still pending and are in various stages of implementation. Projects implementation can generally be divided into three categories, short term (can be implemented in 1-3 years), mid-term (can be implemented in 3-7 years), and longer term (with implementation timelines of more than 7 years). Most projects have a variety of funding, permitting and entitlement requirements. The following describes the phasing of each of the projects described in previous chapters and is illustrated in *Exhibit 10*, *Project Implementation Schedule*.

Short Term Projects (1-3 years)

- a) Pier 94 Asphalt Batch Plant
- b) Backlands Improvements and Leasin
- c) Amador Street Warehouse/Assembly
- d) Bayview Gateway Public Art
- e) Reconstruct Copra Crane as a labor landmark
- f) Quint Street freight rail improvements
- g) Amador Street interim streetscape improvements
- h) Islais Creek Promenade extension
- i) Port and Port tenant signage
- j) Heron's Head Park temporary art
- k) Remove deteriorated pier structure (Piers 82, 84 and LASH)
- 1) Securing of new cargo opportunities for Pier 80

Mid-Term Projects (3-7 years)

- m) Reactivation of Pier 96 cargo facility
- n) Demolition of Pier 90 grain silos
- o) Reconstruct/repair Amador Street
- p) Coordinate with Union Pacific Rail Road and Joint Powers Board on improvements to freight rail corridor
- q) Miscellaneous public realm improvements

Longer Term Projects (7+ years)

- r) Cargo Way redesign and rebuild
- s) Construct a warehouse at Pier 90 once the grain silos are demolished

Port staff will continue to track and implement projects to their completion. Staff will also work with the Port and City's capital planning committees to identify funding sources and will pursue grant and other funding sources where feasible.

As the Port continues to implement these strategies, staff will continue to work with Port stakeholders, SWAC and MCAC on each of the projects so as to improve the area and to implement the plan.



Credits

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Maritime Commerce Advisory Committee

Southern Waterfront Advisory Committee

