

# California Sustainable Freight Action Plan: Pilot Project Solicitation Request

## Port of San Diego Consolidated Bulk Facility at the Tenth Avenue Marine Terminal

### Project Title:

Port of San Diego Consolidated Bulk Facility Development

### Location:

Port of San Diego's Tenth Avenue Marine Terminal  
687 Switzer Street, San Diego, CA 92101-7810  
117°9'20.98"W 32°41'57.46"N

### Executive Summary:

The Port of San Diego (Port) is a State of California Special District, established by the State Legislature in 1962, and entrusted to protect the Tidelands Trust by providing economic vitality and community benefit through a balanced approach to maritime industry, tourism, water and land recreation, environmental stewardship, and public safety. The Port adopted a Climate Action Plan<sup>1</sup> in 2013 to reduce greenhouse gas emissions and is in alignment with the State's climate-related goals and Sustainable Freight Initiative. One of the Port's primary business assets is the Tenth Avenue Marine Terminal (TAMT), which is an omni-terminal with a diverse commodity mix, catering to three broad cargo types: Break Bulk, Refrigerated Container, and Dry Bulk. In May 2013, the Port of San Diego initiated an update to the 2008 Maritime Business Plan<sup>2</sup> that resulted in a proposed market-driven Redevelopment Plan for the Tenth Avenue Marine Terminal (TAMT)<sup>3</sup>, designed to align infrastructure investments to market conditions through 2035. Phase I of the Redevelopment Plan consists of demolishing two underutilized sheds to improve intra-terminal operations, for which the Port was recently awarded partial funding in the form a \$10 million TIGER grant from the U.S. Department of Transportation. **Phase II of the proposed Redevelopment Plan involves the development of a Consolidated Bulk Facility (CBF), and is the focus of this pilot project proposal.** The proposed Redevelopment Plan is currently undergoing environmental review (CEQA and NEPA Analyses), and is expected to be complete and ready for certification in mid-2016.

This project proposal is for Phase II of the proposed TAMT Redevelopment Plan, which consists of the **development and implementation of a Consolidated Bulk Facility (CBF)** for the import and export of clean dry bulk products at the Port of San Diego's Tenth Avenue Marine Terminal. Dry bulk goods are currently distributed at multiple storage locations throughout the terminal. Dry bulk operations utilize outdated conveyor systems and diesel powered cargo handling equipment, including traditional clam-shell grabs and diesel trucks, to transfer bulk products to first point of rest for storage until delivery to the customer. Consistent with the Port's Climate Action Plan to increase efficiency and reduce greenhouse gas emissions, a CBF will utilize a modern enclosed conveyor system, capable of handling multiple bulk commodities, and electrical-powered pneumatic cargo loading and discharging equipment

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<sup>1</sup> Climate Action Plan. Port of San Diego 2013. <https://www.portofsandiego.org/environment/3414-port-of-san-diego-adopts-climate-action-plan.html>

<sup>2</sup> Maritime Business Plan. Port of San Diego. 2008. <https://www.portofsandiego.org/?Itemid=382>

<sup>3</sup> Redevelopment Plan for the Tenth Avenue Marine Terminal. Port of San Diego. 2013. <https://www.portofsandiego.org/tenth-avenue-marine-terminal-proposed-redevelopment.html>

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that is capable of zero or near-zero emissions cargo operations. An electric conveyor system and infrastructure for cleaner technologies will link ships at berth to the CBF and reduce the necessity for diesel powered equipment to make intra-terminal trips to disparate storage locations. A CBF will centralize dry bulk cargo handling operations on the south eastern portion of the terminal and maximize access to an existing on-dock rail facility for all bulk cargo types using the CBF. The CBF will be shared by multiple operators, resulting in operational efficiencies and streamlined terminal traffic flows. **Planning, design, and construction of the CBF is required to create a more sustainable operation in alignment with future market projections, the Port's Climate Action Plan, and Governor Brown's Executive Order B-32-15.**

### Detailed Description:

#### Terminal Overview

The proposed **Consolidated Bulk Facility (CBF)** represents one of the few opportunities to be at the forefront of sustainable freight initiatives by designing a non-container cargo handling facility with equal consideration to advanced emission reduction technologies and cargo handling improvements, prior to commercial operation. Once operational, the CBF would serve multiple dry bulk operators and commodities, with the potential to handle two bulk cement accounts, one bauxite account, one soda ash account, and various other smaller commodity accounts. The project would include cargo handling and electrical infrastructure to create a more efficient and sustainable dry bulk operation. The Port is seeking assistance in developing the CBF, including a comprehensive planning effort (in partnership with existing terminal tenants and users), facility design, technology analysis, equipment selection, installation of an updated conveyor system to include covered portions designed to minimize dusting, pneumatic bulk loading and discharge systems, conduit and associated electrical infrastructure for powering the facility and charging trucks and other equipment, at berth equipment to reduce vessel emissions, underground pipelines, and associated infrastructure improvements for inter-terminal operations. Renewable energy and conduit and electrical charging infrastructure will be included in the development of the CBF to minimize the environmental footprint of the project and support zero and near-zero emissions trucks and/or equipment. The CBF will occupy approximately 19.5 acres of space in the south-east portion terminal, and be served by berth 10-7/10-8 (aerial view of the terminal is attached).

Dry bulk cargo operations currently consist of a variety of methods including clam-shell discharges to diesel hopper-trucks; vacuum discharge, and "super-sack" one-ton bags discharged by crane. Cargo is then conveyed to first point of rest either by an overhead conveyor system, via diesel truck, or with a forklift for bagged commodities. First point of rest varies depending on available open space and delivery schedule, and includes existing silos and flat storage (on ground, in covered warehouses or uncovered open space). Storage locations are spread throughout the facility and lack a dedicated location based on commodity type.

The existing overhead conveyor system and ship unloader are antiquated and would benefit from newer technology. Diesel powered trucks for intra-terminal moves with dry cargo can be upgraded to zero and near-zero emission technologies when they become commercially available. Included in the development of a CBF are new domes, storage facilities, and mechanical and pneumatic unloaders,

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pipelines and conveyor systems to handle intra-terminal moves. Electric vehicle and equipment charging facilities will be installed to support the use of zero emission electric vehicles where appropriate. The Port has commissioned multiple consultant studies to evaluate potential configurations of a CBF. Ultimately, the final layout and components will be determined based on the needs of CBF users and market conditions.

Consistent elements to be considered in the final design include an updated conveyor system with the capability of handling multiple bulk commodities to and from the CBF to increase energy efficiency of the operation and decrease the need for intra-terminal truck trips. In addition, planning for new electrical infrastructure to power zero and near-zero emission cargo handling equipment is necessary to support the next generation of equipment on the terminal. These upgrades will secure emissions reductions for air pollutants and greenhouse gases. Furthermore, the operation of new storage facilities, a conveyor system, and electrical infrastructure presents the opportunity to use renewable energy sources to power a percentage of the CBF's operation. The planning of these components will include an analysis of renewable energy opportunities, which may be incorporated into the facility. This project represents an excellent opportunity to integrate zero and near-zero emission technologies at the initial planning and design phases of the project. Ultimately, the proposed Consolidated Bulk Facility will attain long-term operational improvements that increase cargo throughput and result in fewer air quality impacts and an overall reduction in greenhouse gas emissions.

### Market Overview

The Port of San Diego has developed operational expertise in handling clean, dry bulk commodities at the Tenth Avenue Marine Terminal. This expertise has resulted in a long-standing stable dry bulk cargo business for the Port with multiple long-term contracts with top-tier dry bulk cargo customers primarily handling imported cement and bauxite, and exported soda ash.

The expected increase in population in Southern California, as well as a push towards more sustainable construction materials, will have a long-term impact on regional construction and cement consumption. The San Diego Association of Governments (SANDAG), San Diego's regional MPO, recently issued a Regional Transportation Plan outlining a plan for \$214 Billion in transportation investment through 2050 to accommodate population growth in the region. Market projections indicate that there could be as much as a 73.5% increase in cement demand in San Diego County from 2017 through 2035. The Portland Cement Association (PCA) has indicated that there are no plans for domestic cement plant capacity expansion. There will not be sufficient domestic capacity from cement facilities in Southern California to meet regional demand, requiring that the gap be met with imported cement. Imported cement to be used for building projects in San Diego County and the Imperial Valley could be handled through the TAMT cargo terminal. Investments in the terminal to increase dry bulk cargo capacity by approximately 40% will be required to meet this imported demand.

In the event that additional capacity is not available at TAMT, approximately 60% of the projected total imported cement volume could be handled at the current facility; while the remaining 40% required to meet regional demand would be handled through other California ports. The remaining tonnage required to meet demand would move into the San Diego and Imperial Valley destinations via truck.

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Assuming no investment (which would require imported cement to be handled at other California locations), the vehicle miles traveled (VMT) required to meet demand is estimated at 4,180,187 miles per year. If the CBF is constructed and becomes operational at TAMT, VMT is estimated at 1,607,760 miles per year; a reduction of 2,572,427 in annual VMT, or a 61% reduction in annual VMT. The analysis assumes an average truck load is 24.5 metric tons.



Tenth Avenue Marine Terminal Consolidated Bulk Facility Concept

### Climate Action Plan

As a trustee of public lands surrounding San Diego Bay, the Port is responsible for planning and preparing for the future impacts of climate change. In 2013, the Board of Port Commissioners adopted a Climate Action Plan (CAP)<sup>4</sup>. The CAP establishes two targets to reduce GHG emissions: 10% by 2020 and 25% by 2035, both from a 2006 baseline. A suite of measures to reduce emissions are presented in the CAP as

<sup>4</sup> Climate Action Plan. Port of San Diego. 2013. <https://www.portofsandiego.org/environment/3414-port-of-san-diego-adopts-climate-action-plan.html>

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part of six source categories: Transportation and Land Use, Energy Conservation and Efficiency, Alternative Energy Generation, Water Conservation and Recycling, Waste Reduction and Recycling, and a Miscellaneous category.

The goals of the Port's CAP are in agreement with California's climate change strategy to increase use of alternative fueled vehicles and equipment and escalate renewable energy generation. As a result, a majority of the Port's emissions to be reduced by 2020 include the transportation and energy-related initiatives. The Port has already implemented a number of measures to reduce GHG emissions from these categories including installation of shore power equipment at the Cruise Ship Terminal and TAMT, investments in hybrid and CNG fleet vehicles, lighting retrofits, and installation of photovoltaic systems on Port operated buildings.

Prior to the development of the CAP, the Port developed a Clean Truck Program to reduce emissions of air pollutants from its maritime operations. In 2008, the Port, in association with the San Diego Air Pollution Control District, utilized Carl Moyer funding to assist operators of drayage trucks to replace older truck engines with newer less pollutant-generating models. The program resulted in 36 truck engine replacements for drayage operators who regularly visit the Port's marine terminals. In addition, in 2010, the Port prohibited all trucks that do not comply with the Drayage Truck Regulation from entering the Port's marine terminals.

All of these efforts have been successful at reducing emissions of air pollutants and GHGs at the Port's marine terminals. These efforts are increasingly important for TAMT which is located adjacent to the community of Barrio Logan which is recognized as a Disadvantaged Community. The Port's 2012 Maritime Air Emissions Inventory, which compared 2012 emissions to a 2006 baseline, demonstrated that emissions of diesel particulate matter declined by 75%, nitrogen oxides by 50%, and GHG emissions by over 40%.

Implementation of the proposed TAMT Redevelopment Plan will create a more efficient and sustainable marine terminal that is consistent with the Port's CAP. The development of the CBF will reduce truck trips regionally, decrease the use of diesel vehicles and equipment on the terminal, and provide increased energy efficiency and renewable opportunities. This project is an important step in meeting the Port's longer-term 2035 CAP goal.

### Economic Impact

The maritime industry is a significant economic contributor to the regional San Diego economy. The Port of San Diego's overall economic impact in 2013 (the last year that numbers are available) is \$7.8 billion. Of that, \$3.5 billion is generated from the Port's maritime industrial business. The average compensation for workers in the maritime industry is \$72,000 per year.

The creation of the CBF is anticipated to provide significant economic impact to the local economy. Near term new construction jobs at TAMT are estimated to be approximately 80 new jobs. Full time job creation during CBF operation is estimated to increase as market demand requires additional cargo volume; with an average of 89 jobs between 2017 and 2019, 105 between 2020-2024, and 128 for the

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period 2025-2035. An average of 20,000 new jobs per year in San Diego County are estimated with the development of the CBF in construction, ready-mix plant operation, design and engineering, construction industry support, and trucking. A commitment to infrastructure (electrical conduit, charging stations, etc.) to power the next generation of cargo handling equipment technology will also expedite the development of new technology and further indirect and induced job creation.

### **Approximate Schedule and Cost:**

#### Schedule

The proposed TAMT Redevelopment Plan is presently undergoing Environmental Impact Review (EIR). Phase I of the proposed plan is funded, and scheduled to begin construction upon the adoption of the EIR, likely during the second half of 2016. Phase I includes the demolition of underutilized transit sheds and office spaces, paving and grading of the resulting open space, and the relocation of Port staff and tenant facilities. The final scope and timeline for Phase I are currently under negotiation with Department of Transportation as part of a TIGER Grant funding agreement.

The Port has an existing agreement with the one tenant directly impacted by Phase I and the resulting demolition scheduled to occur (that portion of the demolition will likely be in early to mid-2017). That tenant, CEMEX, has been notified of the relocation requirement, and they have indicated they are willing to participate in the development of a CBF, and eventually locate to that facility. The terms of their agreement require a 24-month formal notification of relocation prior to their vacating their existing facility.

Additional Port dry bulk tenants have also indicated their interest in participating in the development of a CBF on TAMT. While the timeline for construction is still in development with a likely start date sometime in 2018, planning can begin immediately.

#### Potential Cost

The ultimate cost of the CBF is undetermined, and will be impacted in large part by the timeline, required hard storage and cargo handling infrastructure, tenant investments, cost sharing and/or financing incentives, available technology, and grant funding opportunities. However, the Port of San Diego has estimated that full-build out will cost approximately \$77 million.

### **Consolidated Bulk Facility Conceptual Schedule and Estimated Cost**

<b>Proposed Pilot Project Component</b>	<b>Schedule</b>	<b>Estimated Cost<sup>5</sup></b>
Planning, consulting, engineering, legal, and outside services	2016-2017	\$3.66 Million
Design	2017-2018	\$300,000
Construction	2018	\$73.2 Million

<sup>5</sup> Cement/Dry Bulk Industry Report and Recommendations for the 19.44 Acre Consolidated Bulk Facility (CBF). Developed by Phil Caldwell, Inc. for the Port of San Diego. 2014.

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### **Progress Reporting:**

Progress reporting on the components of this project proposal includes regular updates to the California Air Resources Board (CARB), the California Energy Commission (CEC), the Governor's office of Business and Economic Development (GoBIZ), the San Diego Association of Governments (SANDAG), and other agencies, as applicable. Formal reporting will occur quarterly beginning from the start date of the project. Included in the progress report will be a summary of the effort conducted during each quarter. The cost associated with work performed on the project will also be reported. Quarterly teleconferences shall be conducted to solicit feedback from relevant State agencies on the planning and design components of the CBF, conveyor system, and infrastructure upgrades.

Informal reporting and stakeholder outreach has already been conducted, and is ongoing, on the elements of the proposed TAMT Redevelopment Plan, of which the CBF is a portion. Stakeholder outreach will continue throughout the planning and development of a CBF. The Port of San Diego periodically conducts economic impact studies and other outreach efforts, which will include highlights from the successful implementation of a CBF.

Finally, in accordance with Public Resources Code 21081.6 and Section 15097 of the State CEQA Guidelines, the Redevelopment Plan's EIR will include a Mitigation Monitoring and Reporting Program (MMRP). The purpose of the MMRP is to ensure that the proposed project implements the necessary environmental mitigation measures and/or performance standards identified in the Final EIR. The Port, as the lead agency under CEQA, is responsible for review of all monitoring reports, enforcement actions, and disposition of final documents and reports. Although the EIR analysis is still in progress, the Port anticipates that some mitigation measures will be tied to the amount of throughput that is handled at the TAMT. As a result, the Port will be closely monitoring the amount of cargo, (including metric tonnage of dry bulk), processed at TAMT annually through the plan's horizon year of 2035. The MMRP, in conjunction with the Final EIR analysis, can be useful tool to help assess how the project is meeting its various long-term environmental goals (e.g. reduced air quality impacts and greenhouse gas emissions) by comparing future year activities to baseline conditions.

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### Role of State Departments:

The State departments primarily involved in this project proposal include the California Air Resources Board and the California Energy Commission. The potential roles of these departments are presented as follows:

### **Potential Roles of State Departments**

State Department	Role in Proposed Project
California ARB	<ul style="list-style-type: none"><li>▪ Analysis and review of planning material</li><li>▪ Consultation on air pollutant and greenhouse gas reduction strategies</li></ul>
California Energy Commission	<ul style="list-style-type: none"><li>▪ Evaluation of renewable energy opportunities for upgraded equipment and infrastructure</li><li>▪ Recommendations for energy efficiency</li></ul>
Governor's office of Business and Economic Development	<ul style="list-style-type: none"><li>▪ Stimulating economic growth in the San Diego region</li><li>▪ Promoting commercialization of new technologies and equipment</li></ul>

### Conclusion:

The proposed Redevelopment of the Tenth Avenue Marine Terminal, including the development of a Consolidated Bulk Facility, presents a rare opportunity to increase cargo terminal capacity and sustainability. The proposed CBF represents a unique opportunity to develop an innovative and transformative dry bulk operation that will spur economic growth for the San Diego region and reduce GHG emissions and air pollutants. Relevant to the Port's Climate Action Plan and California's climate strategy, planning, design, and construction of the CBF will help meet sustainable freight initiatives by transitioning traditional diesel-powered freight operations to more efficient, alternative powered means, evaluate potential opportunities for shore side technology to reduce emissions from ocean-going vessels, and incorporate renewable energy generation. This is an important project for meeting the Port of San Diego's dual mission of promoting maritime industry and environmental stewardship.

### Contact Information:

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