

San Francisco Bay Conservation and Development Commission

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TO: Commissioners and Alternates

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SUBJECT: 2014 Bay Area Maritime Cargo Monitoring Report
(For Commission information only)

Staff Summary

“San Francisco Bay is one of the world’s great natural harbors, and maritime commerce is of primary importance to the entire economy of the Bay Area.”¹ The Bay Area total maritime cargo shipping volume grew nearly seven percent in 2014, remaining moderately short of the *San Francisco Bay Area Seaport Plan* (Seaport Plan) forecast. A breakdown of ocean-going cargo passing through Bay Area ports during 2014 reveals that container cargo volume, the primary shipping mode, increased two percent (304,032 metric tons) from 2013. In the same period, non-container, or bulk cargo, moved as follows:

- Neo-bulk cargo, comprising primarily automobile imports, increased 22,942 metric tons, or six percent.
- Dry bulk cargo—comprised of construction material imports and exports of scrap metal—increased more than 12 percent, or 634,910 metric tons.
- Non-petroleum liquid bulk cargo fell by four percent to 396,381 metric tons in 2014.
- There was no break bulk cargo handled.

¹ San Francisco Bay Plan

The Seaport Plan also includes projected 2020 throughput, or cargo-handling capability, for each major cargo type at the Bay Area ports. In 2014, container² cargo used 48 percent of the designated 2020 throughput capacity for this cargo type, while dry bulk³ used 64 percent of the capacity designated for those commodities. Liquid bulk⁴ cargo utilized nearly 39 percent of the available capacity, followed by neo-bulk⁵, which used 17 percent of terminal capacity. Break bulk cargo as defined in the Seaport Plan⁶ utilized none of the regional port capacity. At current levels, the Bay Area retains considerable unused cargo handling capacity as designated by the Seaport Plan.

Staff Report

Background. The Seaport Plan provides for annual monitoring of waterborne cargo and marine terminal use to aid in assessing requests for deletion of a shipping terminal or port priority use area from the plan, or for conversions of terminals from bulk to container use. The staff has monitored the regional maritime cargo flow since 1994 by retrieving data from the five Bay Area ports: Benicia, Oakland, Redwood City, Richmond and San Francisco. This report describes cargo activity in 2014, and its correlation with the Seaport Plan waterborne cargo forecast.

Cargo Trends. The total amount of waterborne cargo handled by the five Bay Area ports increased 1,379,042 metric tons, or seven percent, in 2014. Since 1994, maritime cargo tonnage has experienced a net growth of 75 percent. Container volume increased 60 percent over the same period. Of the non-container or bulk cargoes, dry bulk has had the greatest increase, growing 127 percent since 1996 (dry bulk records are not complete for 1994-95). Non-petroleum liquid bulk experienced a 12 percent net decrease over the past 20 years. Neo-bulk has declined 64 percent since monitoring began; in the same period, break bulk has essentially ceased to be handled at Bay Area ports.

The figures below illustrate the cargo trends for the Bay Area compared with projected cargo volumes. As shown, there are distinct variations among the individual cargo categories in terms of how closely tonnage levels track the projected activity.

² General cargo packed and transited in standard size boxes 20 to 40-plus feet in length from origin to destination.

³ Dry bulk cargo is loaded or unloaded via conveyor belts, spouts or scoops, such as sand, gravel and various ores. Sand dredged from the Bay is not included with Seaport Plan dry bulk data.

⁴ Liquid bulk cargoes are shipped in tanks rather than small individual units. The Seaport Plan does not include marine oil terminals; however, petroleum cargo activity is discussed in its own section at the end of this report.

⁵ Neo-bulk cargoes in the Bay Area generally are automobiles, steel products and newsprint.

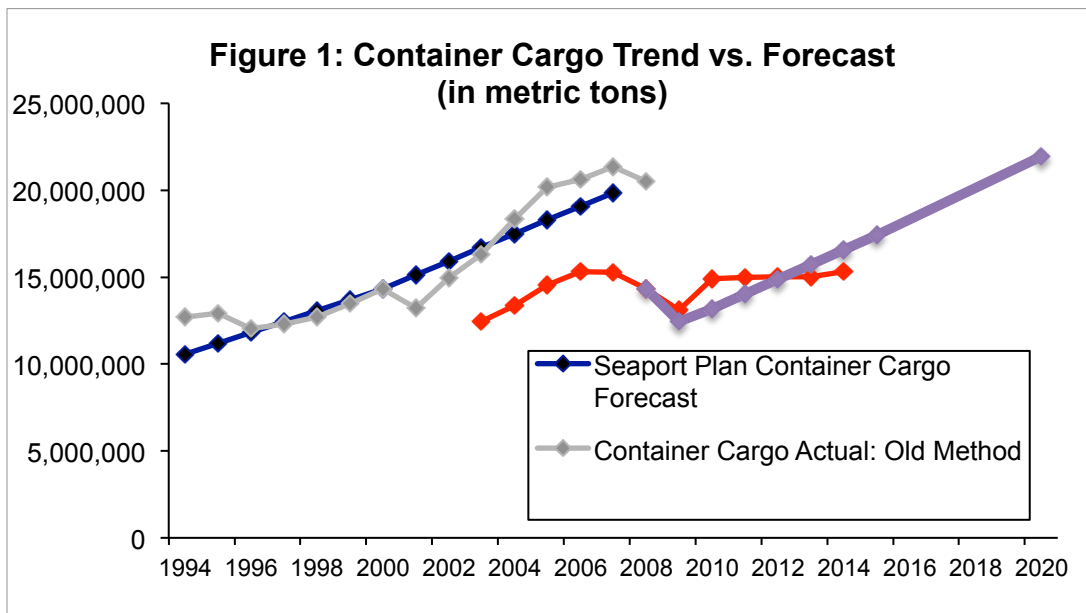
⁶ Break bulk is cargo handled in individually package units.

Cargo Forecast Status. The staff believes the Seaport Plan container and bulk cargo forecasts should be revised in the near future for review and adoption by the Commission. The forecasts were first prepared in 1988 and project cargo volumes through 2020. The Commission will likely consider future proposals to delete port priority use areas from the plan and will need accurate demand projections and capacity assessments to support its decisions. Also important to the Commission’s decision-making related to appropriate land use designations will be the examination of advances in cargo handling technologies to meet future cargo volumes. Additionally, the potential effects of rising sea level on port operations including landside facilities need to be addressed in the Seaport Plan update.

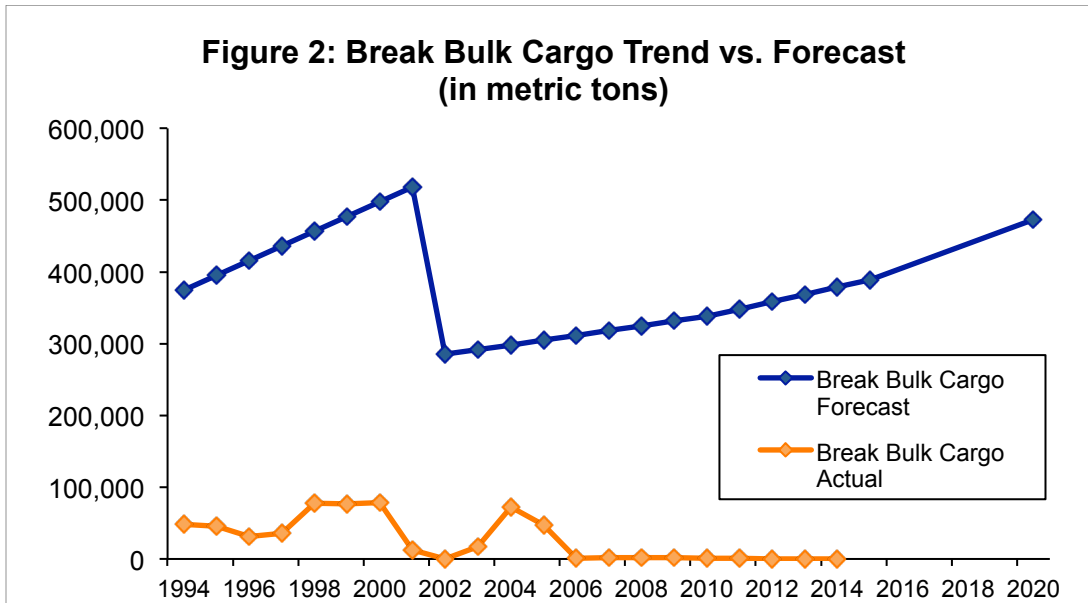
Container Cargo. Seaport Plan projections for all cargo types are calculated in metric tons. For purposes of consistency with industry practice, container cargo is also tracked in TEU, or twenty-foot equivalent units. TEU provides a proportional measure of containers, e.g., a 40-foot container is equal to two TEU, and empty TEU are also counted to more accurately assess land area available in the Bay Area to process containers. Storage and movement of empty containers comprise an important segment of port operations as they occupy a significant land area at terminals. The number of TEU handled in the Bay Area annually has increased 60 percent since 1994, to 2,394,069 TEU in 2014, or approximately 15,322,000 million metric tons.

Figure 1 includes an informal updated projection for container cargo prepared in 2009 following the global economic downturn (“Container Cargo Outlook”). This projection adjusted the regional container cargo estimates downward from the 1988 forecast. Actual container cargo handled in 2014, showing a gain of 47,505 TEU (approximately 304,032 metric tons), is seven percent below the updated projection. Volume in 2015 through August is down six percent, primarily due to an operational slowdown during the first two months of the year.

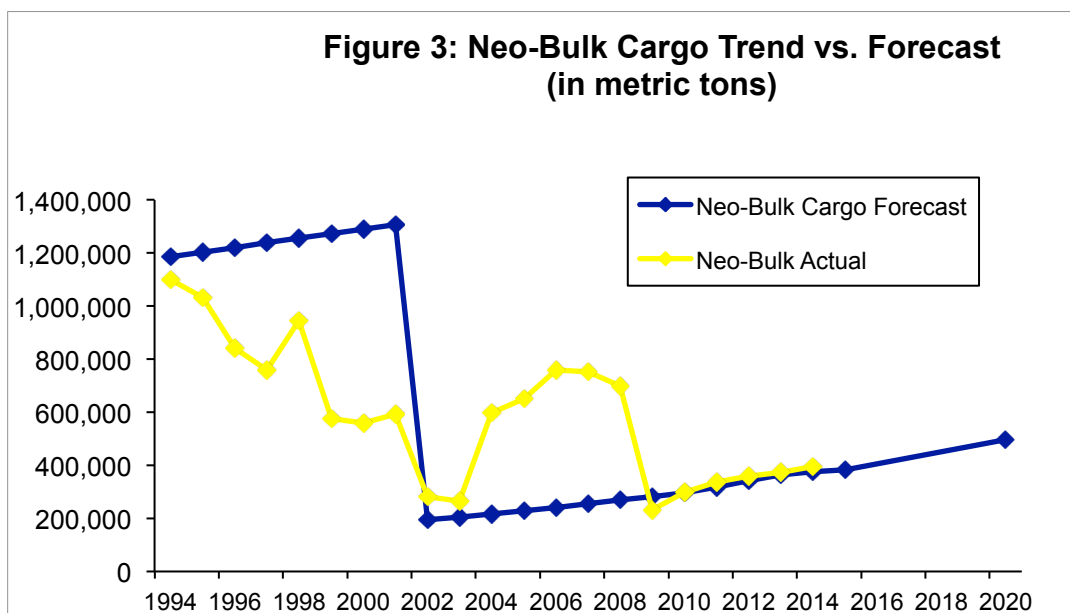
Based on the adopted methodology used in the Seaport Plan, container cargo used 48 percent of its 2020 designated terminal capacity.



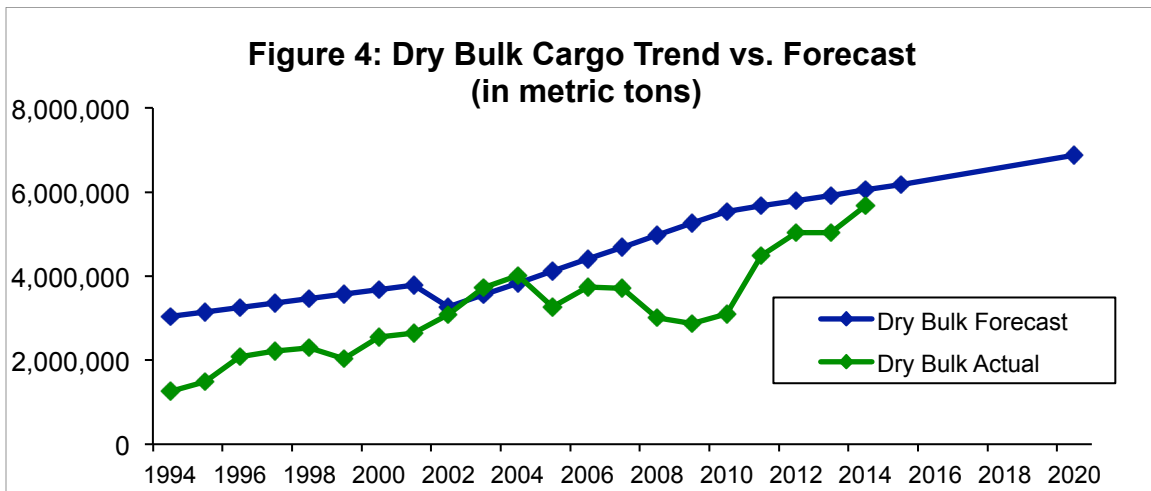
Break Bulk Cargo. Commodities formerly transported as break bulk now ship almost exclusively in containers, therefore break bulk cargo has virtually vanished from the Bay Area, with no tonnage reported in 2014 (Figure 2). The region's ports previously handled lumber and newsprint, and these commodities, with automobiles and steel that are still handled in the Bay Area, are tracked as neo-bulk cargo in the Seaport Plan (See Figure 3).



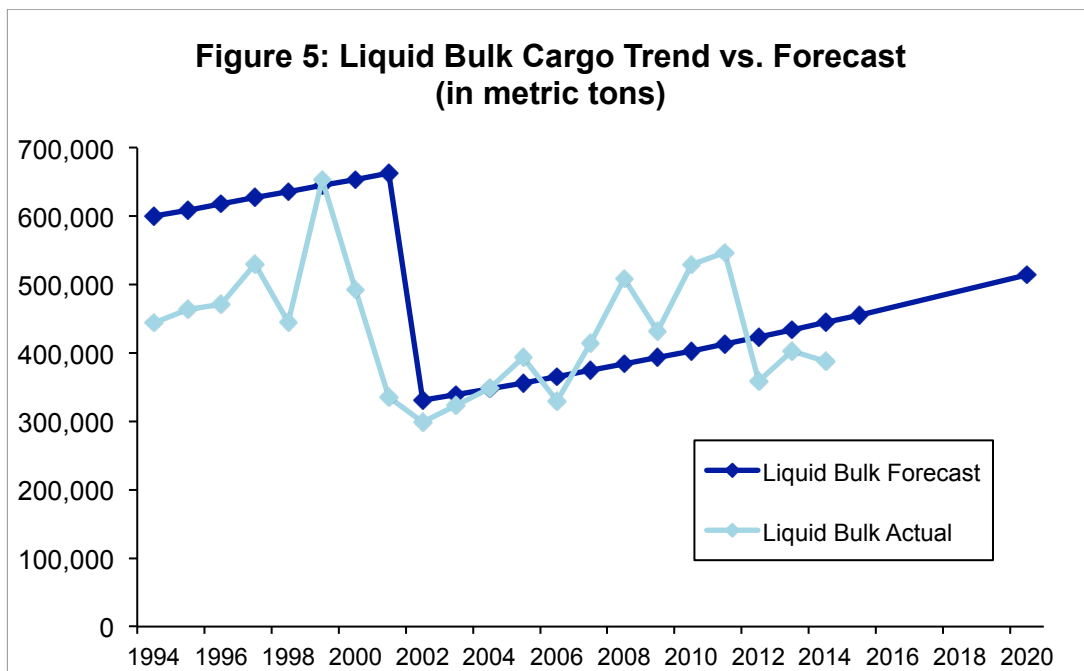
Neo-Bulk Cargo. Figure 3 shows that regional activity has risen steadily from 2009, to 396,381 metric tons in 2014, surpassing by five-and-one-half percent the forecast for this cargo type (primarily automobile imports). Overall, neo-bulk cargo levels have dropped 64 percent since 1994.



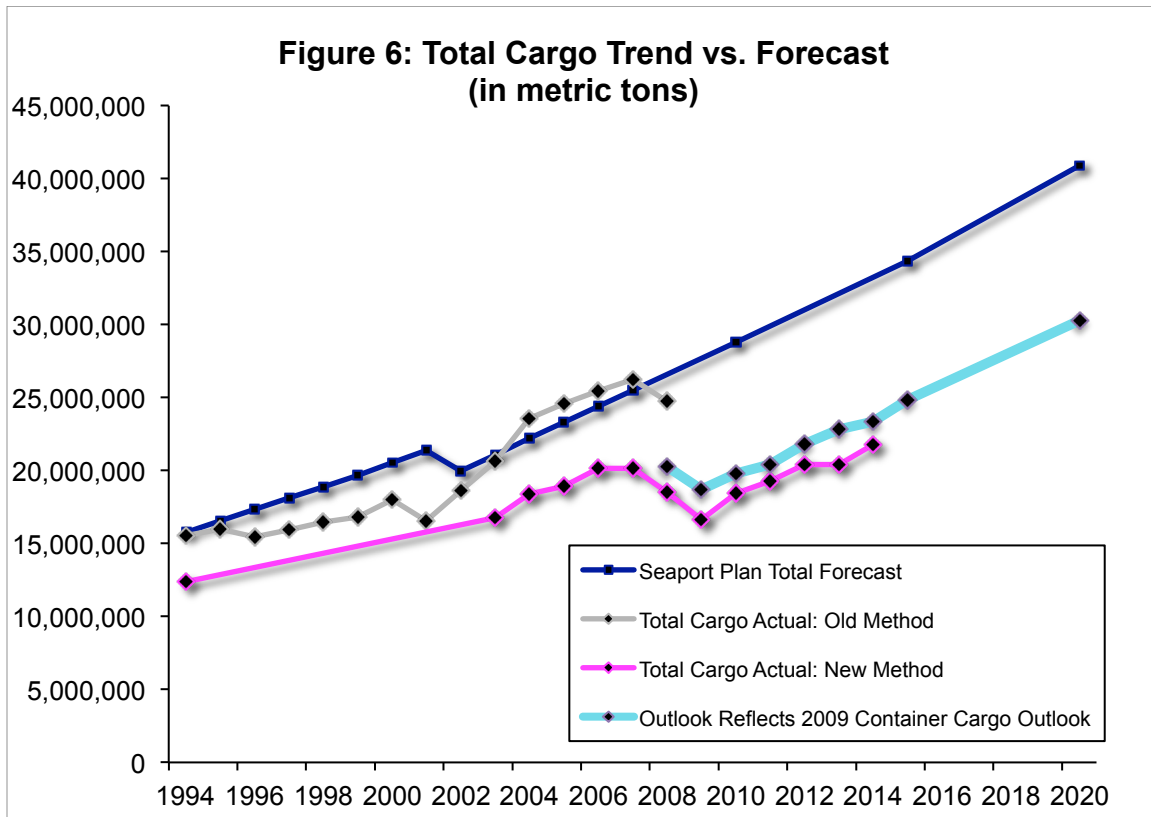
Dry Bulk Cargo. The amount of ocean-going dry bulk cargo handled by the Bay Area ports increased from 4,598,906 metric tons in 2013 to 5,666,840 tons, or more than 12 percent (Figure 4) in 2014. Overall, this cargo type has more than doubled since tracking was initiated; however, 2014 cargo tonnage is seven percent lower than the corresponding forecast. Bay Area dry bulk cargo is largely split between import of construction materials and scrap metal exports.



Liquid Bulk Cargo. The volume of non-petroleum liquid bulk cargo remained below projected levels, decreasing nearly four percent from 403,303 metric tons in 2013 to 387,602 metric tons in 2014. This decline has resulted partly from a shift in demand for tallow from overseas to domestic markets and Mexico, which are served by rail.



Bay Area Total Cargo. The graph below illustrates that total cargo (container plus bulk cargoes) at the Bay Area ports grew in 2014, and was nearly seven percent, or 1,565,170 metric tons, below revised projection levels based on the new container cargo methodology that counts empty TEU and applies 6.4 metric tons per TEU (Figure 6.)



Capacity. The Seaport Plan contains projected 2020 cargo handling capacity, or throughput capability, for each major cargo type. These projections show that the Bay Area ports can absorb considerable increases in waterborne cargo at terminals designated in the Seaport Plan based on current activity (see Table 1). Container cargo is the largest category by volume, and 2014 container cargo activity utilized 48 percent of the projected 2020 Bay Area throughput capability for this cargo type. Based on projected rates of cargo growth and available capacity, the region would not exceed the projected Seaport Plan container cargo capacity until 2019 under the adopted Seaport Plan forecast, or 2030 using the 2009 container cargo outlook.

The second largest category by volume in 2014 was dry bulk, which used 64 percent of the 2020 dry bulk capacity. Non-petroleum liquid bulk used 39 percent of the regional capacity for the category. Neo-bulk cargo in 2014 used 17 percent of the projected 2020 neo-bulk throughput capability. No capacity was used for break bulk handling.

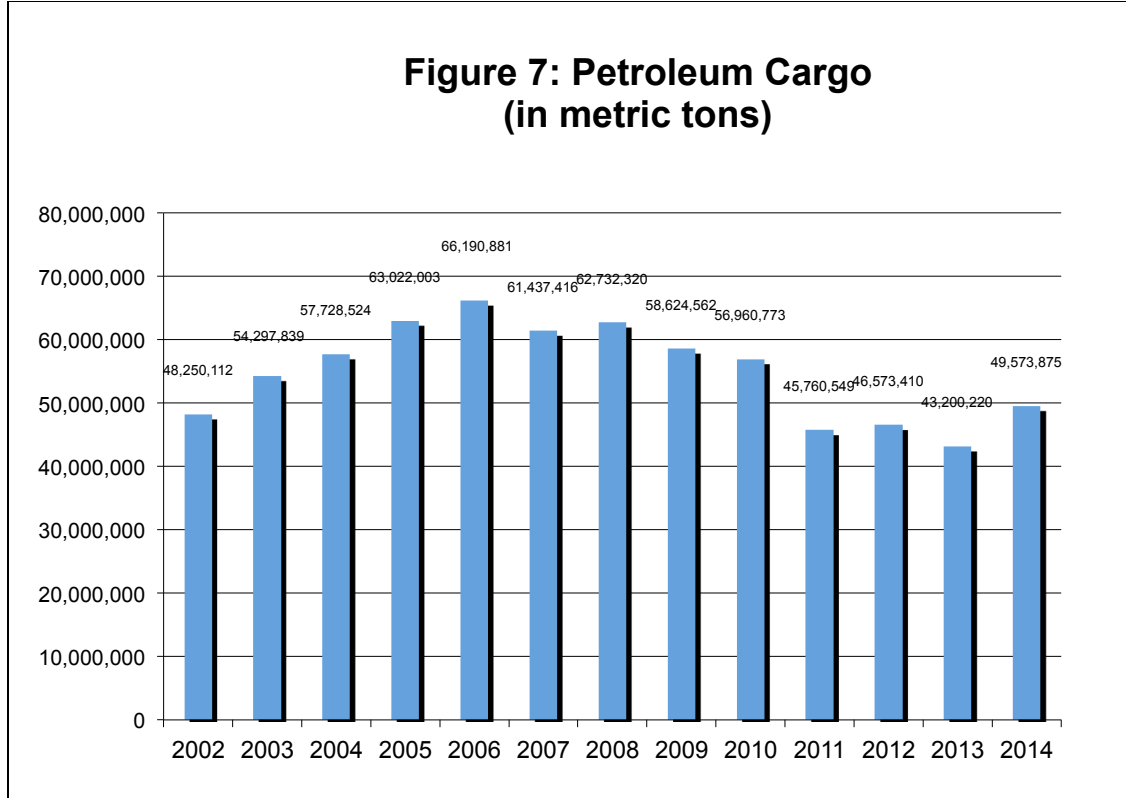
Table 1: Bay Area Cargo Capacity

	2014 Actual Cargo (metric tons)	Revised 2020 Baseline Forecast (metric tons)	2020 Terminal Capacity (metric tons)	2014 Actual Cargo as % of 2020 Terminal Capacity
Container (a)	15,322,042	21,932,800	32,857,600	46.6%
Break Bulk	0	448,198	613,200	0
Neo-Bulk	396,381	497,035	2,367,800	17%
Dry Bulk	5,666,840	6,881,390	9,807,200	64%
Liquid bulk	387,602	514,494	1,000,000	39%
Total	21,772,865	30,273,917	45,612,850	48%

(a) Container cargo data reflect 2009 assessment of the San Francisco Bay Area Containerized Cargo Outlook by the Tioga Group, Inc.

Petroleum. Although the Seaport Plan does not address land use needs of Bay Area refineries (these are addressed in the *San Francisco Bay Plan* water-related industry findings and policies), and therefore, does not include a forecast for petroleum cargo, the volume of petroleum transported by ship to Bay Area refineries is significant and was added to the annual cargo monitoring report beginning in 2002 to provide a more complete picture of maritime cargo flow in San Francisco Bay.

The volume of petroleum products increased nearly 15 percent or 6,373,655 metric tons in 2014 (49,573,875 total) (see Figure 7). The volume of petroleum cargo shipped in 2014 was more than twice the total general cargo tonnage discussed above.



Conclusions. Total actual cargo continued to fall moderately short of the total cargo forecast in 2014 by approximately seven percent. Container cargo fell below the projected 2014 volume by seven percent. Bay Area auto imports continued to rise, causing neo-bulk cargo to surpass the forecast for this cargo type by more than five percent. Dry bulk rebounded to just seven percent below projections. Break bulk cargo continues to be a marginal component of Bay Area activity.

Comparisons of 2014 cargo tonnage with the projected 2020 throughput capability of Bay Area ports show that for all cargo types the ports can continue to absorb significant increases in waterborne cargo. Container cargo used nearly 48 percent of its 2020 terminal capacity designated in the Seaport Plan; under the new method, that proportion shrinks to 46.6 percent of expected regional capacity, as shown in Table 1 above.⁷

Dry bulk used 64 percent of the regional throughput capability for this cargo type, followed by non-petroleum liquid bulk cargo at 39 percent of the regional capacity and neo-bulk at 17 percent utilization. Break bulk cargo used none of the designated capacity in 2014.

⁷ Until such time resources are available to undertake a Seaport Plan update for the Commission to review and adopt a revised container forecast, staff will report container and total volumes using both methodologies.