

San Francisco Bay Conservation and Development Commission

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TO: Commissioners and Alternates
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SUBJECT: **2012 and 2013 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 Since 2011, the Bay Area total maritime cargo shipping volume grew six percent, remaining just below the *San Francisco Bay Area Seaport Plan* (Seaport Plan) forecast. A breakdown of ocean-going cargo passing through Bay Area ports reveals that container cargo volume, the primary shipping mode, remained essentially unchanged since 2011. In the same period, non-container, or bulk cargo, moved as follows:

- Neo-bulk cargo, primarily automobile imports, increased 35,262 metric tons, or nearly ten percent.
- Dry bulk cargo, comprised of construction material imports and exports of scrap metal, increased three percent, or 118,495 metric tons.
- Non-petroleum liquid bulk cargo rose by 12 percent to 403,303 metric tons in 2013 after a 34 percent decline of 187,719 metric tons the previous year.
- The amount of break bulk cargo essentially does not register.

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 2013, container² cargo used 46 percent of the designated 2020 throughput capacity for this cargo type; dry bulk³ used 47 percent. Liquid bulk⁴ cargo utilized 40 percent of the available capacity, followed by neo-bulk⁵, which used 16 percent of terminal capacity. Break bulk⁶ cargo in 2013 continued to utilize virtually 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 since 2011, 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 1,122,700 metric tons, or six percent, between 2011 and 2013. Since 1994, maritime cargo tonnage has experienced a net growth of 65 percent. Container volume increased 57 percent over the same period. Of the non-container or bulk cargoes, dry bulk has had the greatest increase, growing 120 percent since 1996 (dry bulk records are not complete for 1994-95). Non-petroleum liquid bulk experienced nearly a 10 percent net decrease over the past 20 years. Neo-bulk has declined two-thirds since monitoring began; in the same period, break bulk virtually disappeared.

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.

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

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.

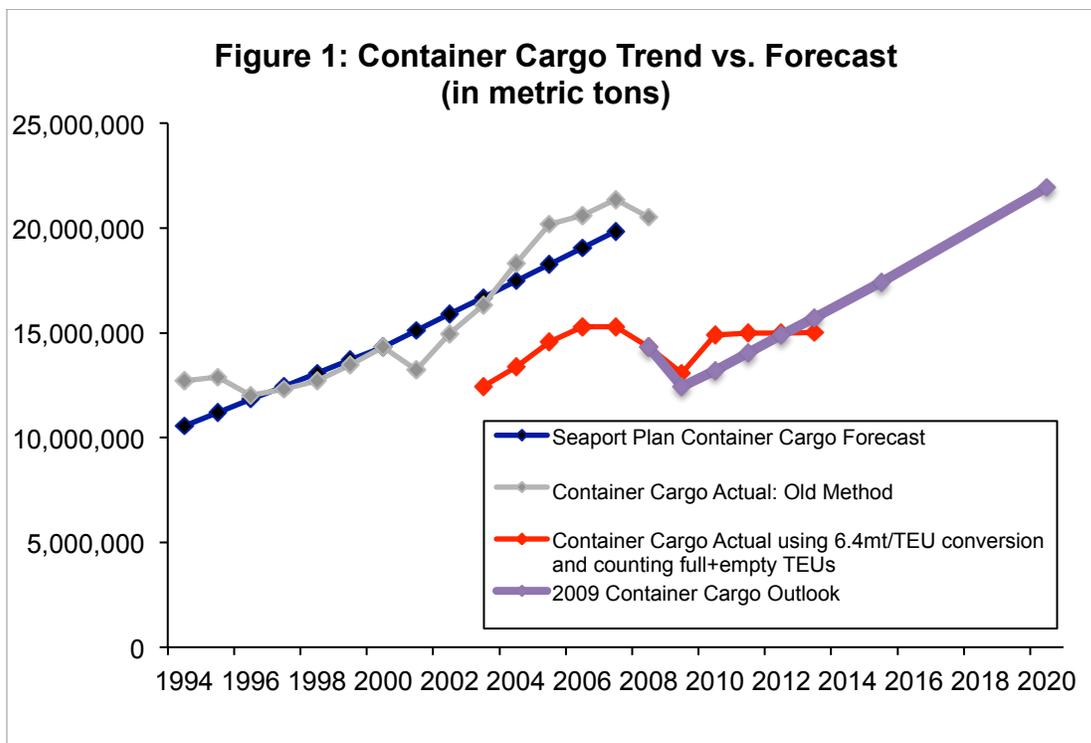
⁶ Break bulk is cargo handled in individually package units.

will likely consider future proposals to delete port priority use areas from the plan and will need accurate forecasts to support its decisions. The staff also believes the categorization of break and neo-bulk cargo should be reviewed for consistency with current industry practices.

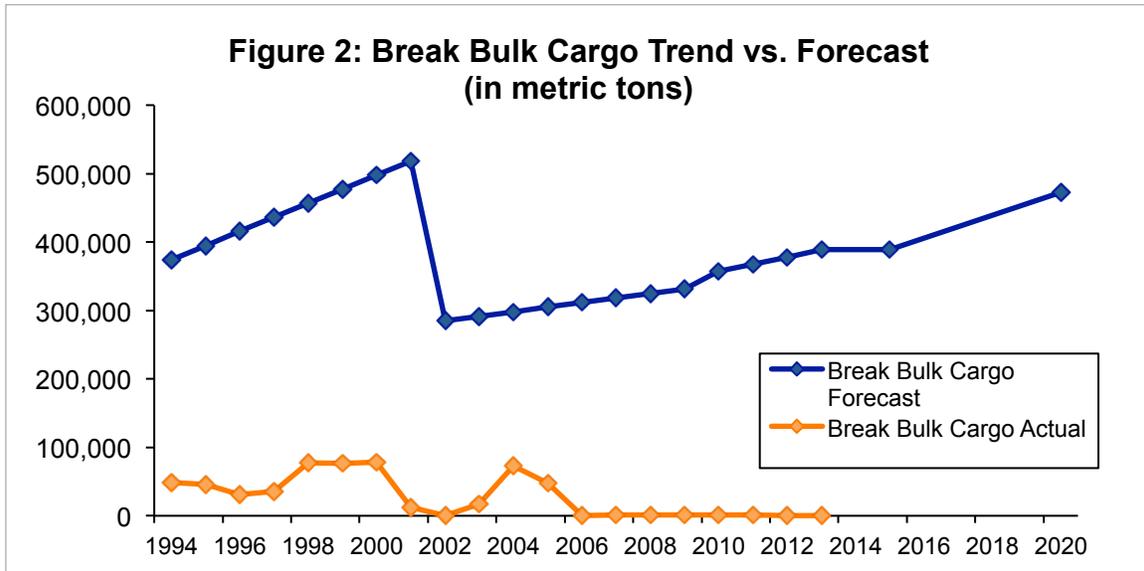
Container Cargo. Seaport Plan projections for all cargo types are calculated in metric tons. For purposes of consistency with industry practice, container cargo is also tracked in TEU, or twenty-foot equivalent units. TEU provides a proportional measure of containers, e.g., a 40-foot container is equal to two TEU. 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 approximately 57 percent since 1994, to 2,346,528 TEU in 2013, or just over 15 million metric tons.

Figure 1 below includes an informal updated projection for container cargo prepared in 2009 (“Container Cargo Outlook”). This projection adjusted the regional container cargo estimates downward from the 1988 forecast. Actual container cargo handled in 2013, showing a modest gain since 2011 of 4,000 TEU (approximately 25,600 metric tons), fell to just four percent below the forecast. Growth this year through September is 1.6 percent.

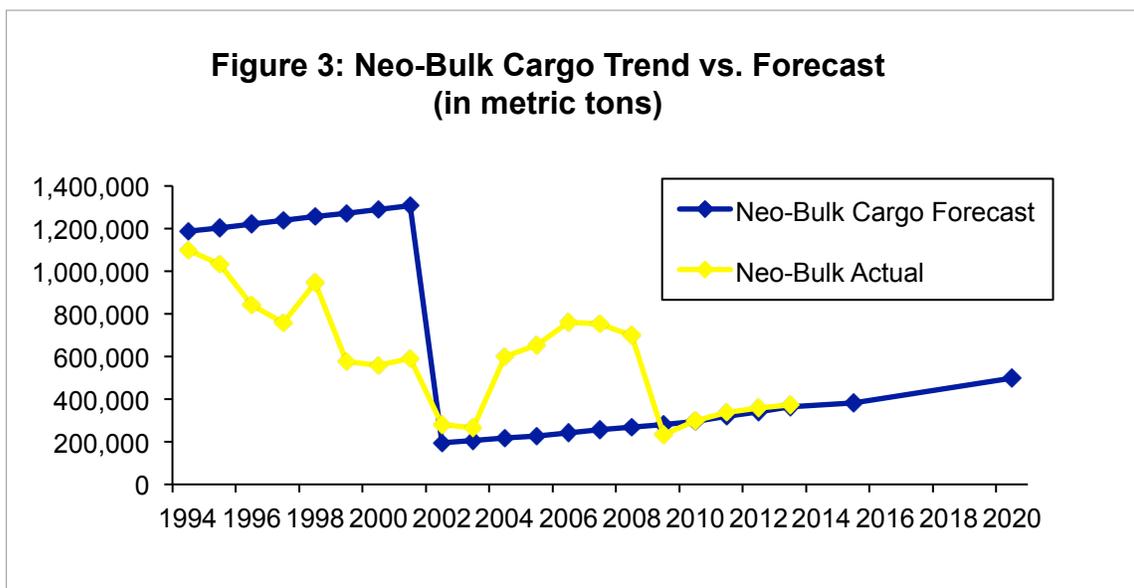
Based on the adopted methodology used in the Seaport Plan, container cargo used 46 percent of its 2020 designated terminal capacity.



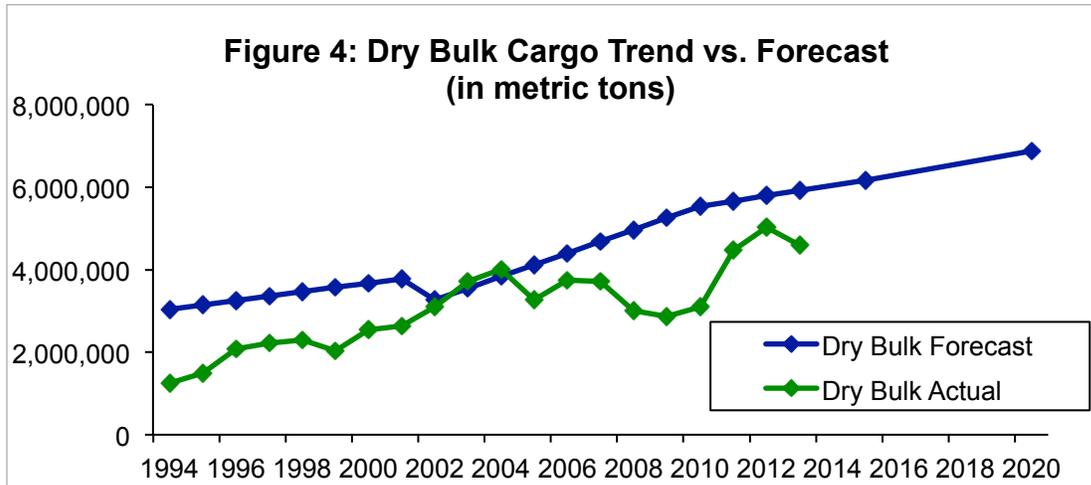
Break Bulk Cargo. Commodities formerly transported as break bulk now ship almost exclusively in containers; break bulk cargo has virtually vanished from the Bay Area, with just under 400 metric tons handled in 2013 (Figure 2). The region's ports previously handled lumber and newsprint, and these commodities, 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).



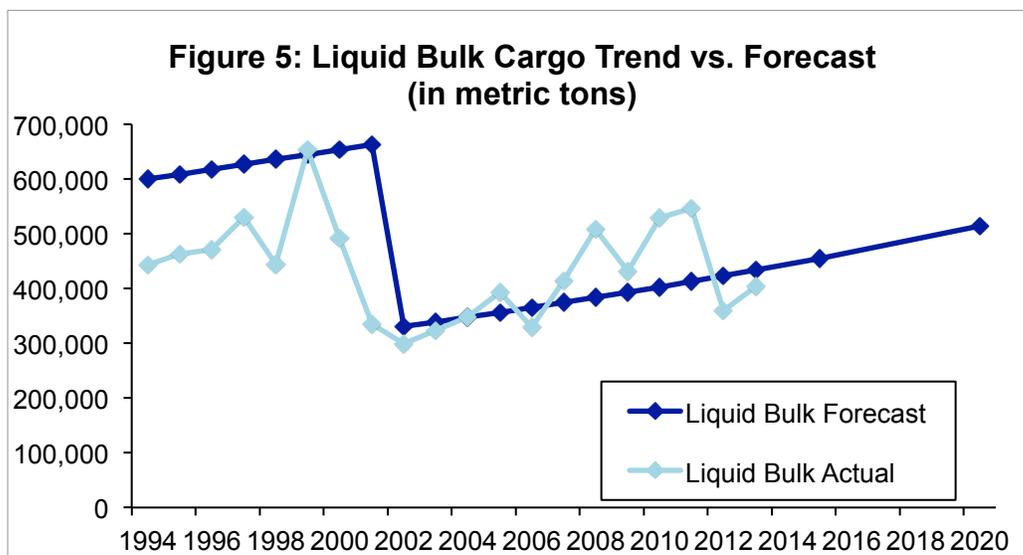
Neo-Bulk Cargo. Figure 3 shows that following a 67 percent drop in 2009, regional activity has risen steadily, from 338,177 metric tons (2011) to 373,439 metric tons in 2013, reaching a level slightly above the forecast for this cargo type (primarily automobile imports and some steel). Overall, neo-bulk cargo levels have dropped 66 percent from 1,098,461 metric tons in 1994.



Dry Bulk Cargo. The amount of ocean-going dry bulk cargo handled by the Bay Area ports increased from 3,791,658 metric tons in 2011 to 4,598,906 tons, or 18 percent (Figure 4) in 2013. Overall, this cargo type has more than doubled since 1996⁷; however, the 2013 cargo tonnage is 29 percent lower than the corresponding forecast. Bay Area dry bulk cargo is split between import of construction materials and scrap metal exports.

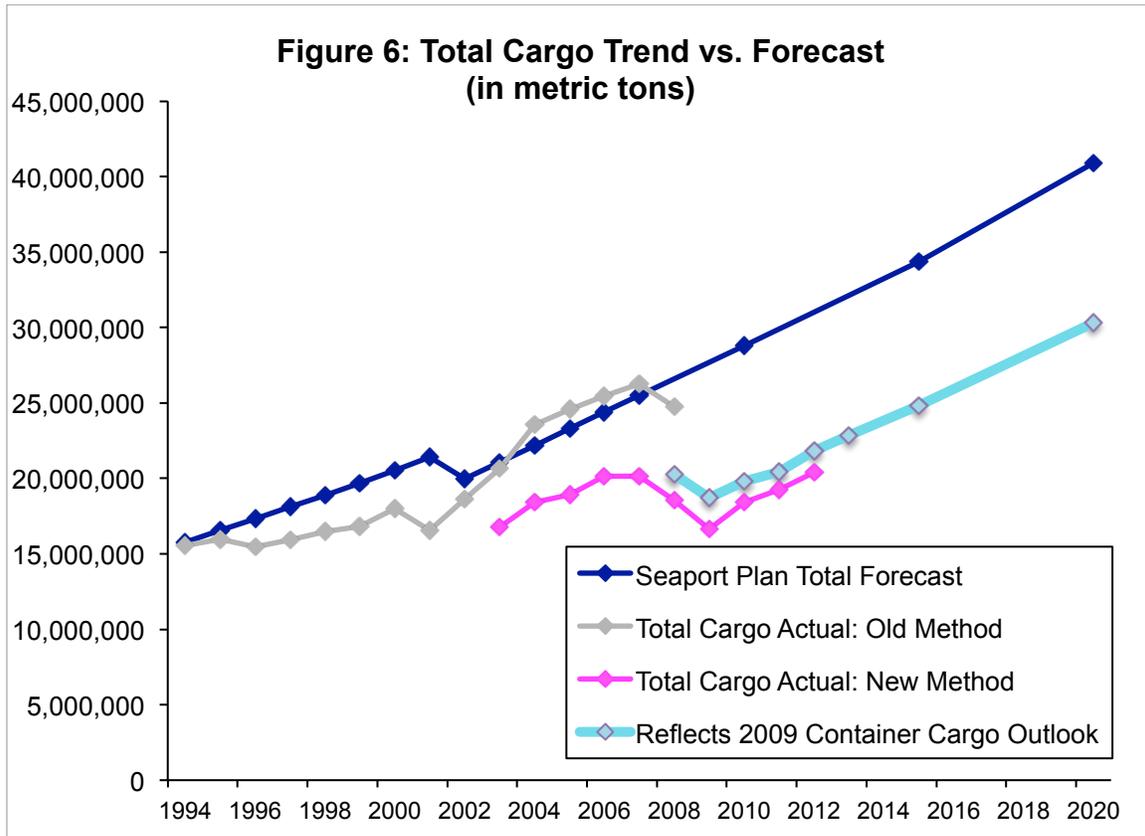


Liquid Bulk Cargo. The volume of non-petroleum liquid bulk cargo fell below projected levels, decreasing 34 percent from a high of 547,011 metric tons in 2011 to 403,303 metric tons in 2013. This decline resulted partly from a two-thirds shift in demand for tallow from overseas to domestic markets and Mexico, which are served by rail.



⁷ Not all dry bulk tonnage reports were available for 1994-95.

Bay Area Total Cargo. The graph below illustrates that total cargo (container plus bulk cargoes) at the Bay Area ports modestly increased in 2013, and was eleven percent, or 2,447,157 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 capabilities, 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. Container cargo is the largest category by volume, and 2013 container cargo activity utilized 46 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.

Dry bulk cargo in 2013 used 47 percent of the 2020 dry bulk capacity. Non-petroleum liquid bulk used 36 percent of the regional capacity for the category. Neo-bulk cargo in 2012 used 14 percent of the projected 2020 neo-bulk throughput capability. Break bulk continues to utilize a minute amount of throughput capability.

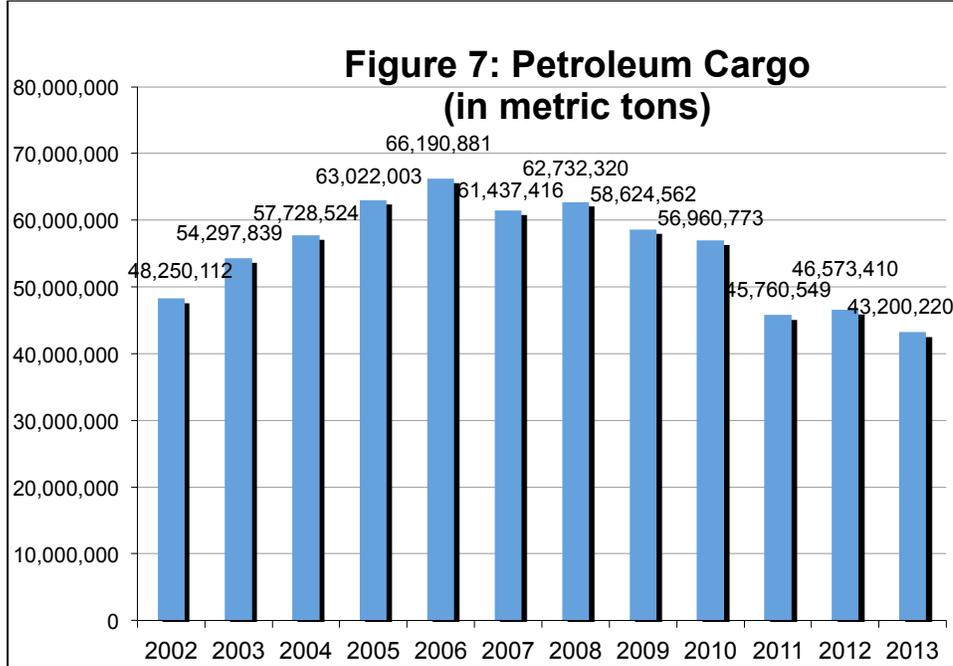
Table 1: Bay Area Cargo Capacity

	2013 Actual Cargo (metric tons)	Revised 2020 Baseline Forecast (metric tons)	2020 Terminal Capacity (metric tons)	2013 Actual Cargo as % of 2020 Terminal Capacity
Container(a)	15,017,779	21,932,800	32,857,600	46%
Break Bulk	396	448,198	613,200	de minimus
Neo-Bulk	373,439	497,035	2,367,800	16%
Dry Bulk	4,598,906	6,881,390	9,807,200	47%
Liquid bulk	403,303	514,494	1,000,000	40%
Total	20,393,823	30,273,917	45,612,850	45%

(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 was up by 812,861 metric tons in 2012 (46,760,410); however, 2013 showed a decrease of 3,373,190 metric tons, or seven percent, to 43,200,220 mts (272,161,384 barrels) (see Figure 7). This decline was due at least in part to an August 2012 fire at the Richmond refinery, which reduced production for a year. The volume of petroleum cargo shipped in 2013 was two times the total general cargo tonnage discussed above.



Conclusions. Total actual cargo continued to fall marginally short of the total cargo forecast in 2012-13. Container cargo, the largest segment of the region’s general cargo shipping, remains at a level greater than that of 2008. Non-petroleum liquid bulk fell below its projected level in 2013. Bay Area auto imports continued to rise, slightly ahead of the neo-bulk forecast. Dry bulk reached a new high in 2012 but declined in 2013, though still slightly above the 2011 level. Break bulk cargo continues to be a marginal component of Bay Area activity.

Comparisons of 2013 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. Based on the adopted methodology used in the Seaport Plan, container cargo used 46 percent of its 2020 designated terminal capacity; under the new method, that proportion shrinks to 46 percent of expected regional capacity, as shown in Table 1 above.⁸

Dry bulk used 47 percent of the regional throughput capability for this cargo type, followed by non-petroleum liquid bulk cargo at 40 percent of the regional capacity for liquid bulk cargoes and neo-bulk at 16 percent utilization. Break bulk cargo continued to use a negligible (<0.2%) amount of the projected 2020 capability.

⁸ 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.