



National City Marine Terminal (NCMT) **Optimization Study**

FINAL REPORT

Date: September 4, 2015

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Prepared for:



Prepared by



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SECTION I. EXECUTIVE SUMMARY AND FINDINGS

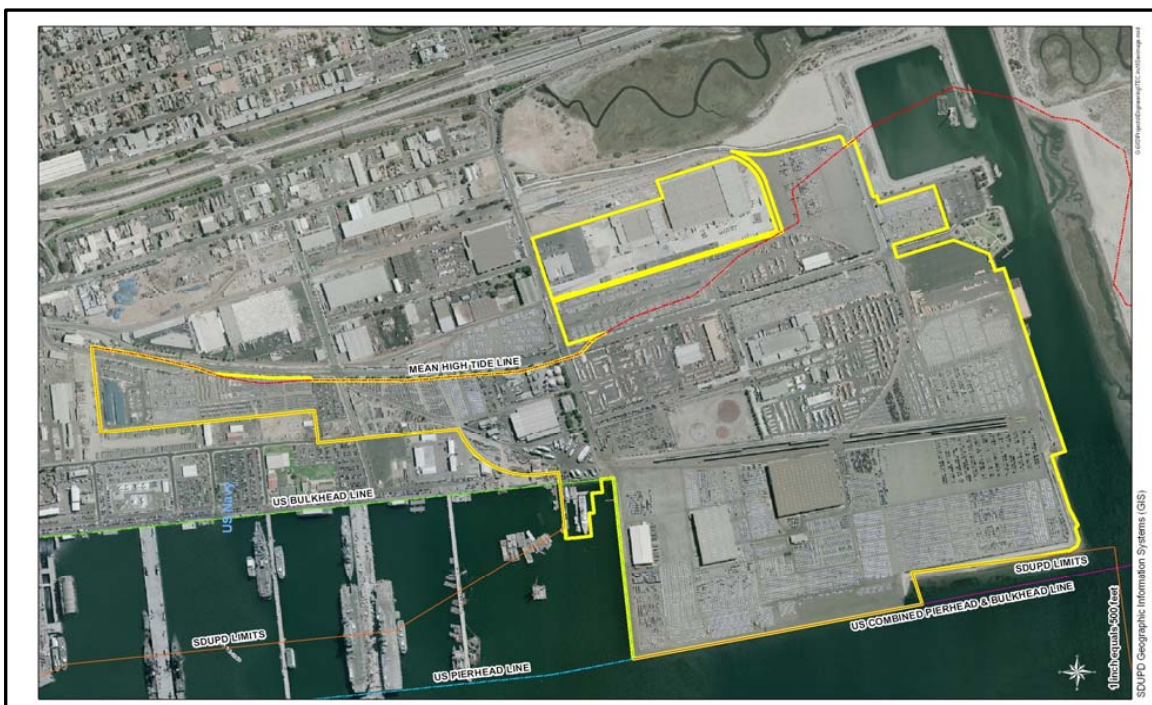
The San Diego Unified Port District (“SDUPD” and “the District”) commissioned Vickerman and Associates (“V&A”) to update the December 2008 San Diego Unified Port District Maritime Business Plan (“2008 Business Plan”). The overall objective of the National City Marine Terminal Optimization Study (“Optimization Study”, “the Study”, or “NCMT Study”) was to provide market driven port terminal optimization concepts for National City Marine Terminal (NCMT).

The NCMT Optimization Study evaluates and discusses the following topics:

- ✓ Identification of key optimization strategies and options
- ✓ V&A relevant experience
- ✓ Short, medium and long market forecast
- ✓ Cargo growth options (Domestic Coastwise Traffic ~ lumber and Hawaii, Automobile imports / exports, and Distribution Center services)
- ✓ Long term facility growth vision
- ✓ Intermodal rail operations recommendations
- ✓ Street access and egress options (Centralized Gate Concept)

The primary boundaries of the maritime Study area are roughly 230-acres (NCMT Main Terminal) with an additional 17.5-acre area west of Tidelands Avenue. The Study area is within a larger National City Bayfront Planning District 5 of the Port Master Plan. This planning area includes the BNSF National City Rail Yard, two BNSF private parcels, shipyards, US Navy facilities, the National Distribution Center, a marina and commercial recreational land uses. The red line shown below is the “Mean High Tide Line”.

The National City Marine Terminal (NCMT), one of two major marine shipping terminals at the Port of San Diego, is south of the other major marine terminal (Tenth Avenue Marine Terminal or “TAMT”), roughly 10.5 nautical miles from the San Diego harbor entrance. The NCMT terminal is located at the end of Bay Marina Drive in the City of National City.



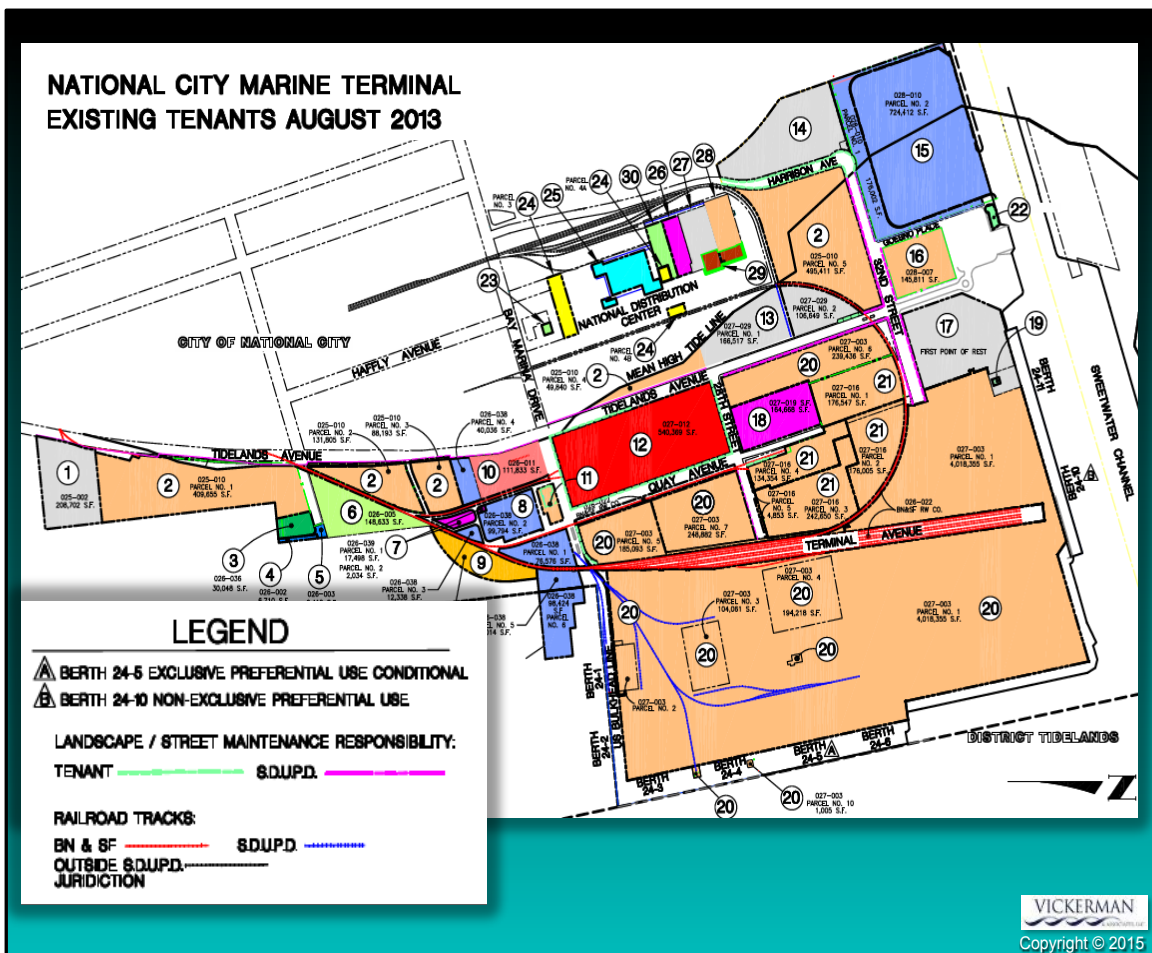
The cargo handled at the terminal includes coastwise lumber (Pacific Northwest), domestic coastwise cargo to and from Hawaii (Pasha Hawaii Transport Line), and international OEM (Original Equipment Manufacturer) automobile imports and exports (Pasha Automotive Services).

The terminal is rail served by BSNF Railroad. The northerly railroad mainline (LOSSAN) originates at the Cesar Chavez BNSF Yard and travels north and then east to US destinations. This mainline rail route is the only access for cargo to the US heartland. Customers south of the Cesar Chavez BNSF Yard are served by the BNSF switching operation services.

The PASHA Group is the NCMT terminal operator for the automobile and domestic Hawaii service, and they are the carrier for the Hawaii service. The lumber companies use ILWU labor to handle the lumber on and off the barge, but they handle their own landside operations. The two cargo-handling lessees reviewed were Pasha (document # 57251, filed 2/7/11) and PRO BUILD (dba Dixieline ~ document 53400, filed 1/17/12).

There are multiple other tenants and customers at the NCMT with leases and Temporary Use Occupancy Permits (TUOPs).

The August 2013 NCMT tenant's map is shown below:



The NCMT Optimization Study analysis focuses on the marine terminal operational improvement opportunities, with particular attention to infrastructure and transportation options, which will maximize and optimize current and future waterborne marine cargo growth and terminal operations.

Strategic Commercial Seaport and Port Planning Order

Another aspect of the NCMT operation and capabilities is the designation of certain facilities related to the U.S. Strategic Port program. The San Diego Unified Port District continues to support the U.S. Strategic Commercial Seaport program. The Port is designated one of the nation's fifteen Strategic Commercial Seaports to support Department of Defense (DoD) cargo shipments during deployment of the Armed Forces of the US. The most current PPO (February 12, 2015) designates the following NCMT facilities:

1. *National City Marine Terminal (NCMT), the facilities are: Berth 2, (700 linear feet plus overhang), Berth 3, (500 linear feet), and Berth4, (500 linear feet) with sufficient space to handle an LMSR, with 15 acres of staging at NCMT, would likely be required within 48 hours, respectively, from notification.*

2. *Rail spurs most likely to be used during a military operation would come from NCMT Tracks 4-7 and TAMT Tracks 3-7.*

The Study did not assess the impact of the PPO on commercial operations. Whenever possible, the SDDC attempts to take commercial interests into account before provide notification.

With respect to the NCMT forecast, the Study's findings suggests that the industry-wide maritime automotive sector will grow at a 2.5% Compound Annual Growth Rate (CAGR), the Hawaii trade will also increase, and intermodal rail operations (transfer of automobiles from vessels to rail) will become even more essential for required expansion to meet market demand. The coastwise waterborne lumber trade ended in 2013, but the Study suggests that a barge service to NCMT may return.

Short, medium, and long-term NCMT optimization options identified in the Study are based upon a market driven assessment and use of a Gross Domestic Product (GDP) approach. The GDP forecast uses publically available GDP trade and transportation information on a national, state, regional and metropolitan basis. On average, both historically and looking ahead, the San Diego GDP is closely aligned to both the California and US forecasted GDP growth.

At the beginning of the Study, a S.I.T.E. (System of Intensive Team Effort) meeting was held at the Port of San Diego. The key findings of the S.I.T.E. process are:

- Future optimization concepts must take into consideration current lease agreements.
- A preliminary market assessment and customer demand shows a need for new terminal capacity for handling the combined domestic and OEM automobile throughput as well as a return to water service by the coastwise lumber tenant.
- The National Distribution Center is a necessary component to the NCMT optimum development options.
- Automobile terminal throughput should be evaluated based upon the unique nature of the automobile throughput (e.g. domestic coastwise vehicle trade, inbound automobiles from Mexico, inbound/outbound OEM automobiles, etc.). Each of these unique operations will have different handling requirements.
- The focus of the NCMT Optimization Study is the orderly and market driven implementation of concepts and options.
- Intermodal rail transportation is a critical element of the NCMT terminal capacity throughput. Limits on truck and rail operations will result in limits on the terminal's cargo throughput capabilities.

The methodology used by V&A was to focus first on a long-term vision, and then to regress from the long term to the short and medium term options all the while maintaining flexibility to achieve the optimal long-term capabilities. The long-term vision can be segmented into four (4) key strategies:

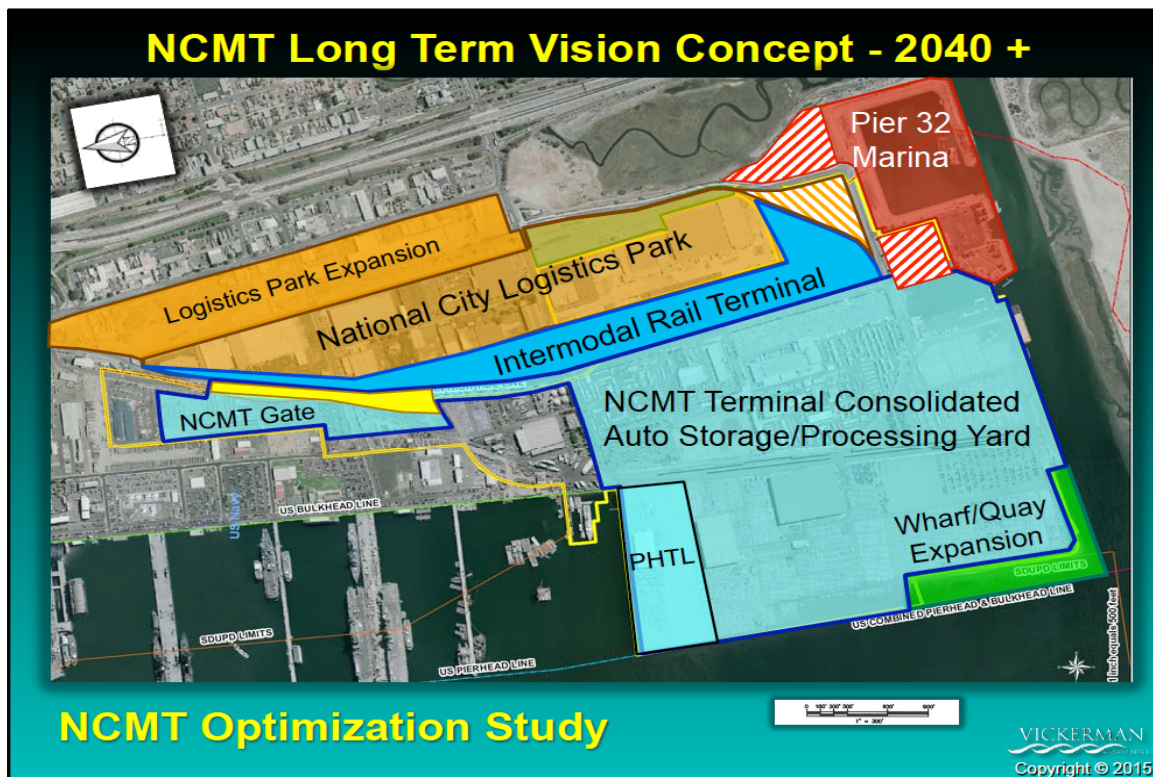
1. Preserve and enhance the maritime cargo terminal areas at NCMT through realignment of parcels, street closures and terminal infrastructure improvements and improved terminal operations.

2. Increase the intermodal rail switching, rail car storage and rail terminal capacity at the NCMT.
3. Focus planning and marketing efforts to establish a new integrated National City Logistics Park using the current National Distribution Center as an anchor development.
4. Continue to support the domestic coastwise Hawaii trade (PHTL).

A summary of the NCMT vision options and recommended actions include the following:

- Maintain existing marine industrial uses and “Mean High Tide Line” parcels for the Terminal Operations Agreement (“TOA”).
- Current Pasha Tidelands Occupancy Use Permits (“TOUPs”) should be incorporated into the TOA when practical.
- Expand the current BNSF rail services to the NCMT loop and loading tracks to permit greater railcar (automobile racks) storage and switching.
- Plan for a future OEM import/export cargo growth in steps ~ short-term (400,000 units), medium-term (600,000 units), and long-term (800,000 units).
- Maintain a 24 to 27 acre portion of the TOA for the domestic Hawaii service. In the event the domestic Hawaii service is relocated (either to another Port of San Diego terminal or to another port of entry), this 24 to 27 acres should be used to expand the Pasha Automotive Services operations.
- NCMT optimization is dependent upon short and medium term actions by the SDUPD, including but not limited to, road closures, CEQA project assessments, Port Master Plan amendments, and modifications to the current TOA.

These aforementioned strategies, options, and actions are then incorporated into a **“NCMT Long Term Vision Concept – 2040+”**



The Optimization Study uses the 2008 Business Plan's¹ calculations for the Maximum Practical Capacity ("MPC") for NCMT. The MPC is between 1,167,000 and 1,617,000 metric tons. This includes lumber coastwise from the Pacific Northwest, 500,000 units of OEM imports/exports, but it did not include the coastwise Hawaii trade.

Since terminals do not operate at the MPC level for long sustained periods of time, the Optimization Study calculates a Sustainable Terminal Capacity ("STC") that is generally 70% of MPC. This is an industry norm. The STC selected for the short and moderate term equates to 1,131,900 metric tons and 600,000 OEM units². If the STC is exceeded for long periods of time, the terminal operator and SDUPD must consider improving terminal facilities or upgrading terminal infrastructure operations consistent with the long-term vision.

The NCMT Optimization Study recommends the following short and medium term (2015 to 2039) options or actions to achieve the identified STC and MPC:

- Incorporate current Pasha TUOPs into the Pasha TOA when practical to provide a degree of marketing certainty for automobile storage capabilities.
- Complete the improvements of the former tank farm parcel to increase automobile storage capacity. The tank farm parcel is in the current TOA lease premises. The improvements are part of a current CEQA Notice of Preparation.
- Add rail capacity for a second vehicle train (storage and switching) to operate

¹ Final Report San Diego Unified Port District Maritime Business Plan Update, December 2008.

² For MPC and STC calculations metric tons is used for consistency with the 2008 Business Plan.

² For MPC and STC calculations metric tons is used for consistency with the 2008 Business Plan. The coastwise trade includes Millions of Board Feet (MBF) for lumber and Cubic Meters (CBM) for general cargo to Hawaii. The San Diego Tariff provides the appropriate conversion rates.

within the BNSF's current eight (8) train per day freight capabilities along the railroad mainline.

- Close streets that bisect or divide NCMT terminal storage and incorporate right-of-ways into the TOA to provide for a consolidated terminal storage cargo area.
- Relocate non-water dependent tenants, at the end of their existing leases, to realign terminal acreage for efficiencies of water dependent uses.

The NCMT Optimization Study recommends that when NCMT's STC begins to exceed the calculated levels on a sustained basis, the following long-term options (2040+) should be considered on a market driven basis:

- Relocate the current on terminal intermodal rail loading tracks to the "Back of the House" within a new Intermodal Rail Facility that would expand BNSF's Intermodal rail capabilities in National City beyond just automobile cargoes.
- Utilize the "National Distribution Center" as an anchor for a new regional "National City Logistics Park". Logistics Park Distribution Centers (DC) offer a wide range of value-added services rather than simply offering static storage, including such services as a foreign trade zone. The new National City Logistics Park could provide transportation, cross-docking, order-fulfillment, labeling and packaging services. Today's DC's are technology-driven with in place state-of-the-art order processing, transportation management and warehouse management systems. DC's are the principal link between suppliers and logistics distribution customers. For example, the BNSF Railway promotes use of their own Logistics Parks and Intermodal facilities on their website. BNSF has DC's strategically located to serve major markets. They include Stockton, San Bernardino, Kansas City, Dallas/Fort Worth, Chicago, and Memphis. The Optimization Study suggests that with the combination of cross-border traffic from Mexico, automobile imports, opportunities for container operations at other terminals, and industrial properties the National City Logistics Park may be a suitable location for such a distribution center.
- Create a new NCMT Centralized Entry/Exit Gate Complex on Tidelands Avenue (north of the NCMT) and in close proximity to the Port's Maintenance facilities. Provide for use of Harbor Boulevard and the I-5 Civic Center as a controlled secure entry/exit to the NCMT terminal. The Central Gate complex would provide also for rapid entry/exit traffic flows for non-NCMT terminal entities in proximity to the NCMT terminal. Working together with NCMT and Non-NCMT users, the goal of this new Centralized Entry/Exit Gate is to provide increased mobility, improved security, and better circulation for all waterfront users in the NCMT area.
- Complete the NCMT Wharf/Quay and backland improvements by extending the NCMT western berths by adding 2,400 lineal feet and extending the Wharf/Quay to Sweetwater Channel and add 1,000 lineal feet along Sweetwater Channel.

SUMMARY OF NCMT OPTIMIZATION STUDY

KEY FINDINGS AND RECOMMENDATIONS

The Study short-term, medium-term and long-term recommendations should only be

considered by the SDUPD when **the market dictates the need for these major improvements and options**. The future key success factor is to develop facilities and terminal capabilities that permit the Port and the Terminal Operator to provide the **“Lowest Cost at the Best Service Level”** to Customers. The Study’s findings and recommendations are grouped into the following themes:

- Market and Terminal Cargo Capacity
- Berth Occupancy and Options
- NCMT Coastwise Domestic Lumber Trade
- NCMT Coastwise Domestic Hawaii Trade
- Storage Capacity and Options
- Intermodal Rail Services and Options
- National City Logistics Park and Distribution Center
- Street Access and Egress.

Market and Terminal Cargo Capacity:

- Options and actions should be market driven and implementation must follow a successful marketing approach.
- The NCMT Optimization Study concurs with previous Mercator analysis and report: *“It is difficult to predict when vehicle manufacturers (the main customers of PAS) might choose to change their gateway port, but the vehicle business is dynamic and customers continuously seek to improve the efficiency of their logistics chain to increase flexibility and drive down costs.”* Be prepared for change. The Optimization Study recommends that the NCMT automobile terminal needs a 20-acre surge area that can be used to accommodate potential new Customers. This surge area should be included in the TOA, and it will be used on a daily basis to accommodate the fluctuation of the import/export OEM business.
- There appears to be new business opportunities that were identified by the terminal operator that will increase automobile throughput at the NCMT. The Study concurs that near-term and long-term opportunities may exist within the West Coast OEM automobile market.
- The Study’s forecast is a stepped and dynamic forecast increasing the throughput for imports/exports from the current 400,000 units (short-term) to 600,000 units (medium term) and to 800,000 units (long term).
- Do not eliminate marine industrial uses within the Port Tidelands. The Optimization Study concludes that by optimizing the use of the tidelands trust property for maritime uses, by improving intermodal rail access and capabilities at NCMT, and by improving overall accessibility to NCMT via the I-5 Civic Center ramps, the Port may be able to achieve the benefits often assigned to an “inland port” distribution facility while eliminating costly land transfer and associated environmental impacts. Similarly, optimizing the use of the tidelands trust property for maritime uses and improving intermodal rail access and capabilities at NCMT may negate the need for on terminal parking structures, while maintaining the inherent efficiencies of open-area cargo operations.

Berth Occupancy and Options:

- NCMT has berth capacity capable to support additional cargo and customers anticipated for the future. There appears to be no constraints at the NCMT vessel berths.
- New capital investments, to expand or extend the current berthing configuration, are not necessary in the short and medium-planning horizon (2015 to 2030).
- Use “shallow portions” of Berth 24-11 or 24-1 for use by the coastwise lumber barge operations (if and when resumed).
- A long-term Berth option is to complete the Wharf/Quay and backlands improvements for Berths 24-7, 24-8, and 24-9. In evaluating improvements, the Study suggests that construction techniques such as a floating structure or ship hull for the unloading of Ro/Ro vessel should be analyzed and may be preferable and less expensive than a typical pile supported marine wharf/quay structure.

Coastwise Domestic Lumber Trade:

- The SDUPD needs to explore the possibilities of re-establishing a coastwise barge service between Longview, WA, and San Diego to provide modal options to Dixieline.
- In the event the domestic Hawaii Service is relocated from NCMT (either to another port or to another San Diego facility), and subject to maintaining the same labor conditions, it is recommended that Berth 24-1 be used for the coastwise barge service. A small portion of the terminal designated for the PHTL service can then be used for short-term storage of lumber prior to delivery to the Dixieline lease premises. This will permit the seven-acre lumber storage parcel, or portions thereof, located near 24-11 to be incorporated into the Pasha TOA and available for automobile storage.
- Relocation of Dixieline within the proposed National City Logistics Park is important to maintaining the existing tax revenues generated by the sale of lumber trusses at this facility.
- Dixieline must have rail served facilities to maintain the rate competition between waterborne barge services and rail services.

Coastwise Domestic Hawaii Trade:

- The NCMT Optimization Study recommends that every effort be made to preserve the economic benefits of the fortnightly coastwise service from NCMT to Hawaii.
- Due to the cargo mix and the recent acquisition of Horizon Lines by the PASHA Group, the Pasha Hawaii Transport Lines service at NCMT is an “**at RISK**” customer.
- It is recommended that the Port District evaluate a new Terminal Operating Agreement or Lease with Pasha to relocate the PHTL service to another SDUPD terminal.
- Relocating the Domestic Hawaii Trade from NCMT has operational benefits to the current Pasha Automobile Services operations.

NCMT Storage Capacity and Options:

- To optimize the terminal flow there needs to be storage capability added to the existing Terminal Operating Agreement (TOA). Of the current 115.7 acres identified in the TOA only 72.65 acres are currently available for vehicle storage.
- The NCMT Optimization Study recommends an amended and restated TOA that includes approximately 153 acres for storage and 188.56 total terminal acres. This makes NCMT one of the largest West Coast automobile terminals.
- The NCMT Optimization Study does not propose any change of use to the NCMT and recommends that it remain an Omni-type of automobile and general cargo terminal dedicated to domestic coastwise trade and automobile imports/exports.
- The NCMT Optimization Study recommends the relocation of the PLA-ART facility to a site within a new and proposed National City Logistic Park. This will provide for a more consistent use of the SDUPD Tidelands property for marine transportation activities.
- With recovery occurring in 2012, NCMT is once again moving toward its STC and MPC cargo capacity levels. In 2013 and 2014, the terminal has exceeded the STC level. A market driven need now exists for NCMT to increase its capabilities and capacity to meet future opportunities above the 350,000 unit STC throughput level.
- Domestic automobile trade should be evaluated separately from the OEM automobiles. The NCMT Optimization Study suggests to accommodate domestic Hawaii automobiles within the 27-acre domestic PHTL (Hawaii) area, it is important to note that when estimating the required vehicle storage acres for the OEM on the Main Terminal, the domestic throughput should not be included in the throughput analysis.
- For the NCMT terminal to achieve 800,000 units capacity, without making major capital investments, the Terminal Operator needs to implement a combination of business operating factors that reduces automobile dwell and increases vehicle storage per acre.
- The NCMT Optimization Study suggests that the terminal operator should have a capacity capability within the TOA to add at least 100,000 units over the current throughput in order to be in a position to attract a new customer. In general, using a factor of 5,000 units per acre/per year, the NCMT should have a 20-acre surge capability to market to new business opportunities.

Intermodal Rail Services and Options:

- A constraint identified by this Study is intermodal rail. Improving and increasing intermodal rail could decrease automobile dwell and thus increase terminal efficiency. The Study strongly recommends taking advantage of two daily vehicle-trains identified by BNSF and PAS to increase the intermodal rail capabilities of NCMT.
- Reactivate the use of the BNSF National City Rail Yard for storage and add a connector to the loop track to facilitate rail car movements.

- The NCMT Optimization Study identified a preferred option for additional storage and new switching operations. The Study concluded that the Option that crosses the Parcel K lot connecting the BNSF Yard to the Loop Track is the “less cost and best service” option and has been evaluated by BNSF as the least cost best service preferred option for increasing intermodal rail capacity into the NCMT.
- With market pressures growing for more intermodal rail services and the need to increase the number of automobile unit trains originating from NCMT, the Optimization Study suggests that a joint intermodal rail strategy be implemented between BNSF, PAS, and SDUPD.
- The majority of increases in future automobile throughput will arrive or depart the NCMT by rail. The NCMT Optimization Study’s targeted metric for the intermodal rail split between truck and rail is 50:50.
- NCMT’s ability to achieve growth and forecasted throughput is dependent on the BNSF and the current LOSSAN rail corridor to support these rail freight movement projections.
- The NCMT Optimization Study recommends that both of the direct and Quay Avenue rail options be maintained and preserved in order to serve the Dixieline operations.
- Long-term, the NCMT Optimization Study recommends relocating the current loading tracks and the loop track within a new and expanded BNSF Intermodal Facility located on the eastern edge of the terminal referred to as the “Back of the House” (terminal).

National City Logistics Park:

- In planning for the enhancement and/or replacement of existing infrastructure at the National Distribution Center (NDC), the NCMT Optimization Study recommends using the NDC as an anchor to a new National City Logistics Park including state-of-the-art Logistics Distribution Centers (DCs) and warehouses.
- Seek users of the National City Logistics Park that will have business advantages being located near a major intermodal yard and marine terminal. The National City Logistics Park should distinguish itself by providing “niche” opportunities for refrigerated fresh produce products.
- Seek locations within the designated area for the National City Logistics Park for the future (2025+) PLA-ART and Dixieline relocations.

Street Access and Egress to NCMT:

- Close 28th Street west of Quay Avenue, Quay Avenue between Bay Marina Drive and 28th Street, and Tidelands Avenue between 28th and 32nd. Closures of the identified streets are within the Mean High Tide Line.
- Incorporate the right-of-way from the street closures into the Pasha TOA thereby providing approximately 4.8 acres.
- Relocate the temporary Tidelands Avenue Bike Path to the western edge of the National City Logistics Park area along Marina Drive.
- Improve Marina Drive to connect to Cleveland Street to provide primary east-west traffic and access to the Pier 32 Marina complex.

- Initiate and conduct a Traffic Study with the tenants, lessees, customers, and private property owners along the Tidelands Avenue to determine the traffic volume, origin, destination, and access/egress requirements. Building upon this Traffic Study, initiate a “Basis of Design Report” for the implementation of a Central Gate Complex to be located north of the NCMT Terminal on Tidelands Avenue.
- To the extent practical and feasible, employ intelligent transportation technologies at the New Centralized Gate to minimize the need for personnel and to provide the greatest degree of efficiencies for users and overall port terminal security.
- The Centralized Gate complex is intended to accomplish the following:
 - Meet 33 CFR Access Control for the NCMT automobile terminal and TWIC requirements in accordance with the Port Security requirements.
 - Provide access to a public weight station for users for marine terminal users and Logistics Park tenants.
 - Provide parking for ILWU parking outside of the restricted and secure marine terminal.
 - Provide visitor check-in and access control.
 - When necessary and appropriate, provide equipment interchange reporting services for any container and cargo services using the NCMT. Employ troubleshooting technologies and capabilities to avoid congestion on the terminal.
 - Provide a separate and secure public road to private lessees, property owners, and non-PAS operations.
 - Provide trucker information on truck routes and encourage truckers to avoid residential areas for access to the Interstate or intra-terminal roads.
 - Engage non-PAS tenants, users, and stakeholders in the planning, design, and implementation of traffic improvements and the Central Gate complex.
 - The Central Gate complex should also provide for rapid entry/exit traffic flows for non-NCMT terminal entities whose operations are in close proximity or adjacent to the NCMT terminal.

Compliance with the SDUPD CLIMATE ACTION PLAN (CAP):

To the extent practical and appropriate, in implementing options and recommendations that comply with the CAP policies and measures is an important component of long term implementation. Some of the principles that apply to the recommendations and findings of the NCMT Study include:

- Encourage uses of alternative fueled cargo handling equipment and terminal and stationary equipment in association with lumber, general cargo, automobile operations, and warehouse/distribution activities.
- Implement roadway management systems on access and egress roads serving NCMT.

- Rail freight systems should be used for the inland distribution of automobiles, including switching of rail cars from the BNSF yards to NCMT.
- New terminal improvements must incorporate energy performance standards, achieve reduction in energy usage and employ state-of-the-art technology, when practical and feasible.
- High mast terminal lighting should include low energy bulbs and should incorporate standards and measures to meet OSHA and marine terminal standards consistent with the CAP.
- NCMT operations should attempt to capture and use recycled water and meet the highest standard for capture and discharge of storm water runoff.
- Improvements should include water conservation measures during construction and CAP standards for water conservation during operations.
- Where practical and feasible, implement renewable energy sources for NCMT operations and establish a “Smart Grid” to allow management and automatic adjustments for the electrical demands associated with the cold and freezer facility at NDC and the PLA-ART cold storage facility.
- Reduce waste and encourage recycling.

II. INTRODUCTION AND BACKGROUND:

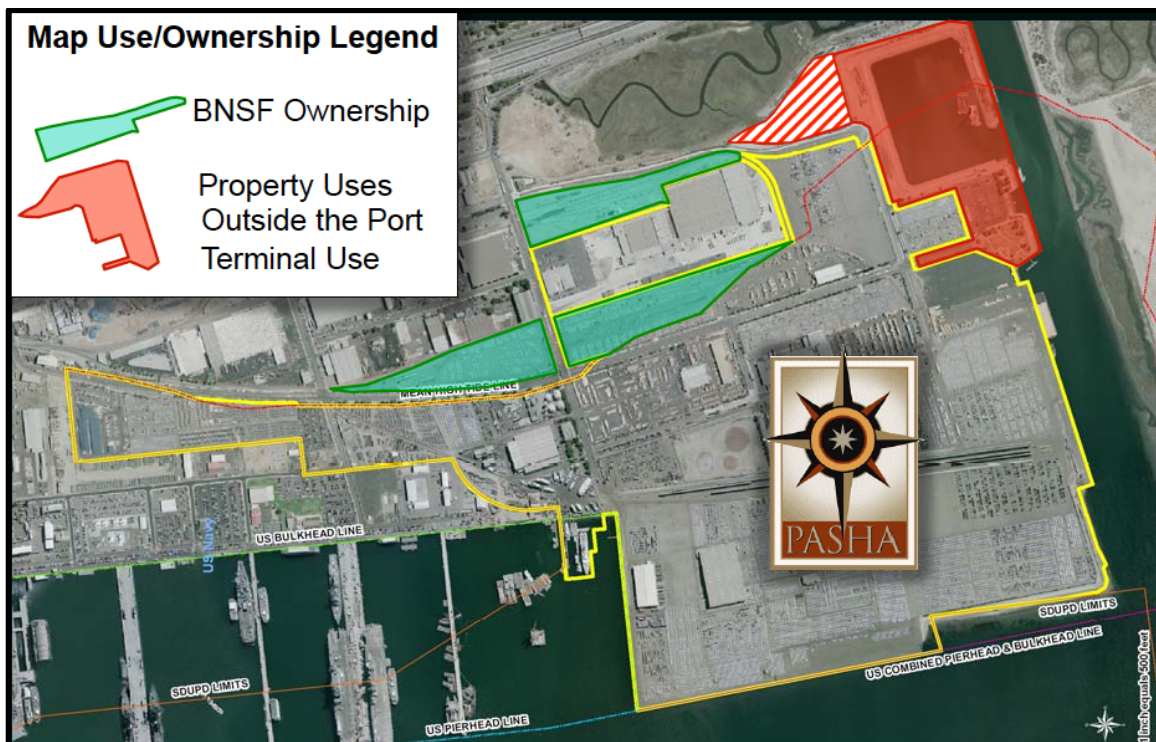
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The original Study boundary is consistent with the 2008 Business Plan shown below and outlined in yellow. The red line is the “Mean High Tide Line”. The NCMT terminal is south of Tenth Avenue Marine Terminal (TAMT) and roughly a 10.5 nautical mile transit from the San Diego harbor entrance. The terminal is located at the end of Bay Marina Drive in the City of National City. The terminal has historically been the home of coastwise lumber, Hawaii domestic cargoes, and OEM (Original Equipment Manufacturer) import & export automobiles. Weyerhaeuser and Dixieline (Pro Build) shared a coastwise barge service from the Pacific Northwest region; and, the PASHA Group is the current terminal operator, domestic Hawaii carrier, and lessee. The study area also includes a combination cold store and freezer warehouse (PLA-ART) and a multi-user warehouse operation referred to as the National Distribution Center (NDC).



Project Study Boundaries from the 2008 TEC Report

In the course of the Study, the BNSF National City Yard and other rail related industrial property and right-of-way were added to the project boundaries. The main San Diego coastal north-south railroad line (LOSSAN) originates in the vicinity of the BNSF Cesar Chavez Yard near the downtown Convention Center complex. This mainline is shared with various public transit agencies. A BNSF rail switching operation serves the rail dependent customers and users located in National City. Parcels that have a land-use designation (shown in red or red hatched below) are commercial-recreation land uses and were removed from the Study.



Project Study Area with BNSF Ownership and Uses Outside of Port Terminal Use

The NCMT is roughly a 230-acre complex bordered by San Diego Bay on the west, Sweetwater Channel on the south, and Harrison Avenue and Bay Marina Drive on the west and north respectively. An additional 17.5 acres of terminal lands are located north of Bay Marina Drive on the west side of Tidelands Avenue. The map below shows the general mix of the NCMT tenants. The largest tenant occupying most of the NCMT land is the Pasha Group.

Port Planning Order Strategic Port

The San Diego Unified Port District continues to support the U.S. Strategic Commercial Seaport program. The Port was designated one of the nation's fifteen Strategic Commercial Seaports in 2006 to support Department of Defense (DoD) cargo shipments during deployment of the Armed Forces of the US.

The Military Surface Deployment and Distribution Command (SDDC) requested the Maritime Administration (MARAD) to issue a pre-emergency Port Planning Order (PPO) for certain facilities at the Port of San Diego.³ Port Planning Order (PPO) identifies the Port's facility requirements may be supported by either the TAMT or NCMT terminals. The designated facilities may be used, for a period of up to 30-days, in the event of deployment of the Armed Forces of the United States. The designated terminals facilities include a berth and staging areas when needed, but permanent facilities are not a requirement.

The most current PPO (February 12, 2015) designates the following facilities:

Two (2) large vessel position in increments of 1,100 linear feet with a minimum of 20 and

³ In accordance with TPAS regulations Part 33, Title 49 and CFR Title 46 Part 340.

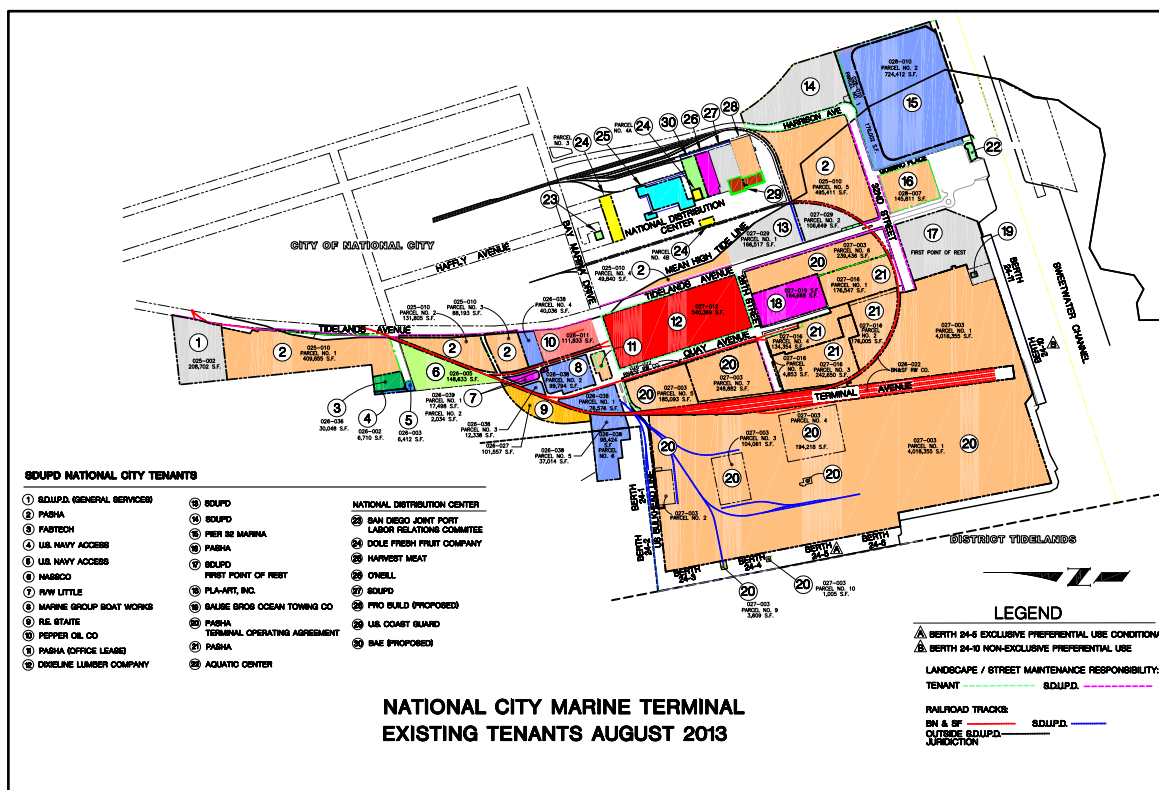
preferred 30 acres of paved open storage secured by perimeter fences per vessel position within 48 hours (unless negotiated otherwise below). Staging areas must be easily accessible to highways, and no farther than 5 miles away from railheads capable of unloading 70-ton vehicles (combined open and closed staging is acceptable). Rail network must have at least 4,000 feet of tangent spurs with sufficient capacity to accommodate at least one, but preferably two, military trains (sixty 89-foot railcars) per day on a sustained basis. Specific facilities for potential use include:

1. National City Marine Terminal (NCMT), the facilities are: Berth 2, (700 linear feet plus overhang), Berth 3, (500 linear feet), and Berth4, (500 linear feet) with sufficient space to handle an LMSR, with 15 acres of staging at NCMT, would likely be required within 48 hours, respectively, from notification.

2. Tenth Avenue Marine Terminal (TAMT), the facilities are: Berths 3, (645 linear feet) and Berth 4 (645 linear feet), with an additional 15 acres of staging area (for a total of 30 acres) at NCMT, would likely be required within 48 hours, respectively, from notification.

3. Rail spurs most likely to be used during a military operation would come from NCMT Tracks 4-7 and TAMT Tracks 3-7.

Whenever possible, commercial interests are taken into consideration by the SDDC when providing notification for use of the PPO facilities. The Optimization Study did not assess nor evaluate the impacts of the PPO on the commercial cargo throughput at NCMT.



The NCMT Optimization Study is an analysis of terminal opportunities with particular attention paid to infrastructure and transportation improvements that optimize waterborne cargo growth.

The Study Report discusses emerging industry-wide maritime and intermodal trends, reviews the NCMT actual cargo throughput, and identifies a market assessment and forecast. The Study accepts the 2008 Business Plan's Maximum Practical Capacity ("MPC") calculations for NCMT as between 1,167,000 and 1,617,000 metric tons. This includes coastwise trade and the OEM imports/exports is estimated at 500,000 units. The MPC was calculated prior to the domestic Hawaii service.

Since terminals do not operate at MPC for long sustained periods of time, the Study calculates a Sustainable Terminal Capacity ("STC") that is generally 70% to 75% of MPC. The STC selected for the short and moderate term is 70% of the MPC that equates to 1,131,900 metric tons and 350,000 OEM units. If the STC is exceeded for long periods of time, the terminal operator and SDUPD needs to consider improving terminal facilities or upgrading terminal infrastructure operations consistent with the long-term vision.

Maximum Practical Terminal Capacity (MPC) is the capacity that is achieved under a practical operating scenario and with the best conditions in place and assumed. MPC is independent of most market forces and the Plan's forecast. However, it is governed by operating equipment and train/vessel arrival and departure schedules. While MPC can be achieved, or even exceeded for short periods, a terminal operator will seldom operate at this level over a long period of time. It would stress the operating system of the terminal.

STC is that capacity which is most profitable to the operator. STC is most accurately determined by a thorough economic analysis of a terminal operation. However, it is generally approximated as 70% to 75% of MPC. The STC selected for this Redevelopment Plan is 70% of the MPC. If the STC is exceeded for long periods of time, the terminal operator will generally consider improving terminal facilities or upgrading terminal infrastructure operations.

Order of Magnitude Cost Estimates:

Whenever cost estimates are presented or referenced, they are to be considered as an order of magnitude "Opinion of Probable Cost". The improvement costs are not guarantee maximum figures.

III. VICKERMAN & ASSOCIATES RELEVANT MARITIME & INTERMODAL EXPERIENCE AND SUMMARY OF NCMT SCOPE OF WORK:

Vickerman & Associates, LLC (V&A) specializes in the port and intermodal industry providing strategic port master planning and port development feasibility analysis for multimodal freight logistics facilities worldwide. V&A is internationally known in the port and intermodal industries for providing innovative solutions to the many operational, planning and design issues confronting the marine and intermodal transportation

industries.

The SDUPD commissioned V&A on January 21, 2015, Document # 62762, to assist the District with a National City Marine Terminal Optimization Study. The scope of work involved a process that has been successful in 67 of the 90 North American deep-water general cargo ports that have benefited from the V&A strategic planning process. The steps in this process were the assessment of existing terminal conditions and a terminal cargo throughput analysis and terminal needs assessment.

S.I.T.E WEEK APPROACH

To initiate the NCMT Study a process, referred to as “SITE WEEK” (SITE is an acronym for System of Intensive Team Effort), was employed. SITE WEEK for this project occurred January 20 and 21, 2015. An important product of SITE was the discussion regarding refinement of the project criteria, illumination of known strengths and weaknesses of the 2008 Business Plan, receive an update on any ongoing projects, and provide V&A an opportunity to provide initial concepts and ideas essential for the future stages of the project.

The purpose of the NCMT Study is the preparation of market-driven optimum maritime business concepts that the SDUPD may use as a “road-map” to implement near term and medium as well as long-term development concepts. The maritime concepts, options and recommendations provided in the Study report are not intended to be at a level of detail that will constitute a project under CEQA. They are conceptual only to enable the SDUPD to explore possible actions. Acceptance, or approval of the NCMT Study or any of its options, is not intended to foreclose any additional alternatives.

As part of the V&A due diligence, the following studies related to the project area were provided by SDUPD:

- Car Processing Facility & Wharf Extension (Desmond, 1/10/08)
- Final Report, San Diego Unified Port District, Maritime Business Plan Update (TEC Inc., December 2008)
- Assessment of Land/Rail Capacity Needs for National City Marine Terminal Final Report (Mercator 2/3/13)
- Land Use Planning for National City Marine Terminal (Mercator 10/24/14) – Pending in process.
- SDUPD Integrated Port Master Planning Study (HKS) – Pending in process.
- National City Planning Consulting Services (Jones Lang LaSalle / Mercator 10/1/2014) – Pending in process
- National City Marine Terminal Tank Farm Paving and Street Closure Project and Port Master Plan Amendment (UPD # EIR-2014-188) – Pending in process
- PASHA Automotive Services, Facility Review, March 2015.

Key findings of the S.I.T.E. process were:

- Future optimization concepts must take into consideration current lease agreements.

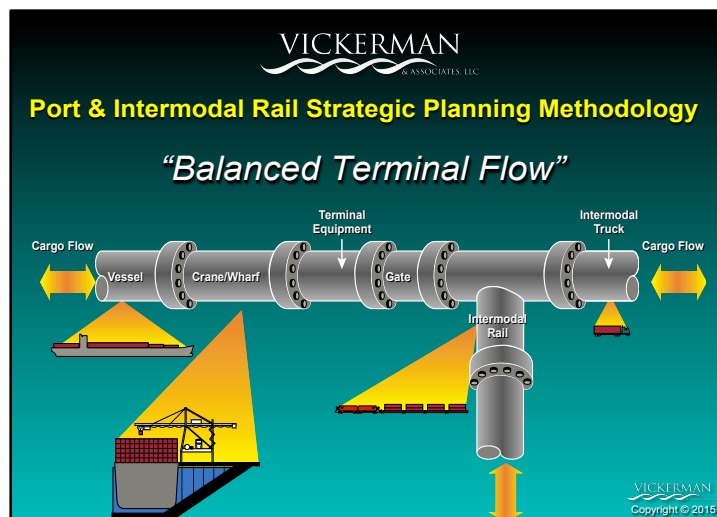
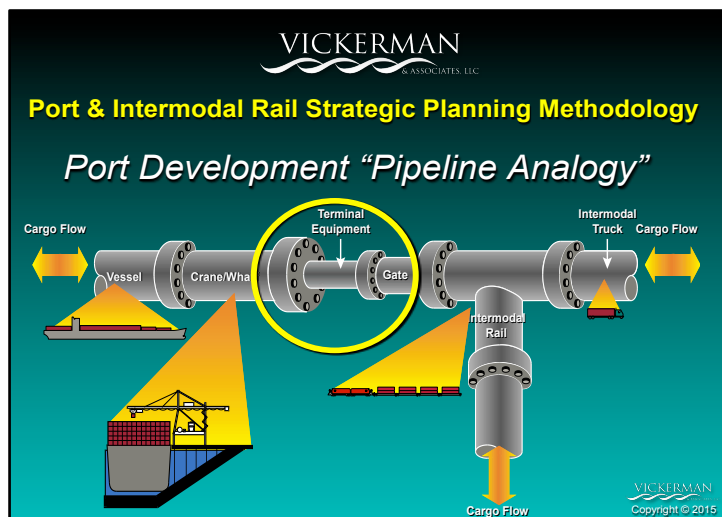
- A preliminary market assessment and customer demand shows a need for new terminal capacity for handling the combined domestic and OEM automobile throughput as well as a return to water service by the coastwise lumber tenant.
- The National Distribution Center is a necessary component to the NCMT optimum development concepts.
- Automobile terminal throughput should be evaluated based upon the unique nature of the automobile throughput (e.g. domestic coastwise vehicle trade, inbound automobiles from Mexico, inbound/outbound OEM automobiles, etc.). Each of these unique operations will have different handling requirements.
- The focus of the Study needs to be the orderly and market driven implementation of concepts and options.
- Intermodal transportation is a critical element of the NCMT terminal capacity throughput. Limits on truck and rail will result in limits to the terminal's cargo throughput capabilities.

IV. NCMT OPTIMIZATION STUDY APPROACH AND METHODOLOGY:

The NCMT Optimization Study methodology used data from a variety of sources including business and market factors. Sources include:

- Previous reports and forecasts prepared for the District
- The maximum practical cargo estimates calculated in the 2008 Business Plan
- A market forecast using US, State (including Hawaii) and Regional GDP's
- Automotive industry forecasts
- ZEPOL Data
- A facility needs assessment with staff and customer input
- Customers' cargo forecasts and market assessments

The Plan's market-driven approach is summarized by the formula "**Forecast less Capacity equals Need**" ($F \text{ less } C = N$). Market conditions change, therefore, the phasing for individual options are suggestions for today's market conditions. They should be considered and used as **general planning tools**.



The methodology employed evaluates six components: vessel/berth, ship to apron, apron to storage, storage yard dwell, inland transfer, and gate processing. If one of the components is constricted, the entire system is affected. The objective is to have a non-constricted, even flow throughout the terminal pipeline.

There appears to be no constraints at the berths for NCMT. However, a long-term option is to complete the Wharf/Quay and backlands improvements for Berths 24-7, 24-8, and 24-9. In evaluating improvements, the SDUPD should evaluate construction techniques used in the Pacific Northwest whereby a floating structure is used for the unloading of Ro/Ro vessel rather than a pile supported structure.

The ship to apron activity at NCMT is Roll-On and Roll-Off (Pure Car Carriers, Pure Car Truck Carriers and Combination General Cargo Vessels). There are no constraints to limit the Roll On and Roll Off Vessel activities. The main operational constraint is the vessel schedule that leads to a fluctuation of the peak demands for vessel discharges.

The apron to storage is constrained by the multiple uses associated with the Pasha Automotive Services (PAS), the location of the current on-dock rail loading tracks, and the need to create a more harmonize terminal layout by incorporating temporary parcels and by relocating not marine-related uses. To optimize the terminal flow there needs to be storage capability added to the existing Terminal Operating Agreement area. Of the 115.7 acres identified in the TOA only 72.65 acres are available for vehicle storage.

Storage dwell time is a constraint on the terminal, and every effort needs to be made to reduce storage dwell time; however, the factors impacting dwell time include slow sales, changes where vehicles are accessorized, domestic vessel capacity, vehicle repairs, aging inventory, and exports.

A throughput constraint is intermodal rail (e.g. rail car storage, switching and main-line access). Improving and increasing intermodal rail will decrease dwell and increase terminal efficiency. The Study strongly recommends taking advantage of the daily two vehicle-trains identified by BNSF to increase the intermodal capabilities of NCMT.

Finally, while the Gate is not a constraint, it is recommended for the long-term to relocate the gate and use the National City Civic Center exit and entrance ramps for the NCMT.

V. SDUPD PLANNING DOCUMENTS:

SDUPD, Final Report, Maritime Business Plan Update, TEC Inc. December 2008:

The San Diego Unified Port District engaged TEC Inc. in August 2006, dated December 2008, to update a 1999 Port of San Diego Marine Terminal Business Plan. The Optimization Study is intended to update the 2008 Plan. Since physical factors at NCMT have not changed since the 2008 Business Plan, the Optimization Study therefore relies on the berth, storage and customer MPC's previously calculated by that Report.

<i>Storage Area</i>	<i>Tenant</i>	<i>Cargo</i>	<i>Size</i>	<i>Approx. Static Capacity</i>	<i>Avg. Dwell (days)</i>	<i>Estimated Annual Capacity⁽¹⁾</i>	<i>Total Cargo FY05/06</i>
Open Storage	Pasha	Autos	140 ac	20,000autos 29,400 mt ⁽²⁾	13 ⁽³⁾	500,000 autos 735,000 mt	314,997 autos 463,610 mt
Open Storage	Dixieline	Lumber	24 ac	25.0 MBF 28,295 mt ⁽⁴⁾	30	300 MBF 339,000 mt	85.712 MBF 97,008 mt ⁽⁵⁾
Lumber W/hse		Dry Storage	30,000 sf	0.60 MBF 680 mt	21	8.0 MBF 9,000 mt	
Open Storage	Weyerhaeuser	Lumber	6 ac	5.0 MBF 5,659 mt	17	75.0 MBF 84,885 mt	60.534 MBF 68,513 mt
Lumber W/hse		Plywood, Dry Goods	7,500 sf	0.15 MBF 170 mt	21	2.2 MBF 2,490 mt	
SUBTOTALS – Cargo Storage Capacity				64,204 mt		1,170,375 mt	629,131 mt
National Distrib. Center	Non-Maritime	Distribution Center	215,400 sf	N/A. Non-maritime use			
	Pasha	Military H/hold Goods	50,000 sf	N/A	N/A	N/A	53,190 mt
	Dixieline	Offices, Fixtures	77,000 sf	N/A. Non-maritime use			
Cold Storage	S.D. Cold Storage	Refrigerated Cargos	100,000 sf (3.8 acres)	N/A. Non-maritime use			
Total Annual Storage Throughput Capacity						1,170,375 mt	682,321 mt

⁽¹⁾ Estimated Annual Capacity is based on Approximate Static Capacity, dwell time, and assumed peaking factors. Dwell times are based on tenant feedback or, when this is not available, on assumed values.

⁽²⁾ 1 auto = 1.47 mt (Source: FY05/06 Port data).

⁽³⁾ Average dwell time for Pasha based on pro-rating the short-term (< 7 days) and long-term (> 30 days) autos by the approximate acreage occupied by each.

⁽⁴⁾ 1 MBF = 1.1318 mt (000's) (Source: FY05/06 Port data).

⁽⁵⁾ Total Cargo for Dixieline in FY05/06 was reported by the Tenant at roughly 208 MBF (236,000 mt), of which about 40% arrives by barge, 40% by rail, and 20% by truck. The Port's total only accounts for tonnage received by barge.

NCMT STORAGE, TENANT, AND ESTIMATE ANNUAL CAPACITY (2008 BUSINESS PLAN)

To optimize the terminal in 2008, the previous Business Plan proposed to realign the existing lumber (Dixieline and Weyerhaeuser) and to consolidate automobile operations on more contiguous leased areas. Also a separate seven (7) acre project cargo storage area was proposed. The former Business Plan also called for the relocation of the cold storage facility since it would allow road closures recommended. The optimum development scenario in the Business Plan provided for expansion to permit an increase in lumber to over 400 MBF annual capacity, 600,000 units of automobiles, and a new project cargo capability.

Since 2008, the proposed realigned lumber operation placed the lumber operation where today the Pasha Hawaii Transport Line stages coastwise service for Hawaii. Dixieline and Weyerhaeuser no longer call at NCMT with a coastwise barge service, and project cargo is being handled at the Tenth Avenue Marine Terminal.

In addition to the 2008 Business Plan, the following studies and plans were reviewed:

- ✓ Car Processing Facility & Wharf Extension (Desmond, 1/10/08)
- ✓ Final Report, San Diego Unified Port District, Maritime Business Plan Update (TEC Inc., December 2008)
- ✓ Assessment of Land/Rail Capacity Needs for National City Marine Terminal Final Report (Mercator 2/3/13)

- ✓ Land Use Planning for National City Marine Terminal (Mercator 10/24/14) (in Process)
- ✓ National City Planning Consulting Services (Jones Lang LaSalle 10/1/14) (In Process)
- ✓ SDUPD Integrated Port Master Planning Study (HKS) (In Process)
- ✓ National City Marine Terminal Tank Farm Paving and Street Closure Project and Port Master Plan Amendment (UPD # EIR-2014-188) (In Process)
- ✓ March 2015 PASHA Facility Review

SDUPD policy documents reviewed include:

SDUPD CLIMATE ACTION PLAN (“CAP”): While the NCMT Study does not discuss specific implementation, tracking, and monitoring of the CAP measures, the Study follows the CAP’s guiding principles and overarching policies.

The CAP policies and measures are companion measures and should be read as companion documents with the Study. Some of the principles that apply to the recommendations and findings of the NCMT Study include:

- Encourage uses of alternative fueled cargo handling equipment and terminal and stationary equipment in association with lumber, general cargo, automobile operations, and warehouse/distribution activities.
- Implement roadway management systems on access and egress roads serving NCMT.
- Rail freight systems should be used for the inland distribution of automobiles, including switching of rail cars from the BNSF yards to NCMT.
- New terminal improvements must incorporate energy performance standards, achieve reduction in energy usage and employ state-of-the-art technology, when practical and feasible.
- High mast terminal lighting should include low energy bulbs and should incorporate standards and measures to meet OSHA and marine terminal standards consistent with the CAP.
- NCMT operations should attempt to capture and use recycled water and meet the highest standard for capture and discharge of storm water run-off.
- Improvements should include water conservation measures during construction and CAP standards for water conservation during operations.
- Where practical and feasible, implement renewable energy sources for NCMT operations and establish a “Smart Grid” to allow management and automatic adjustments for the electrical demands associated with the cold and freezer facility at NDC and the PLA-ART cold storage facility.

SDUPD Master Plan adopted March 18, 1984: NCMT is part of Planning District # 5 and is described as an established and developed marine industrial area and

intensification of the marine related uses is anticipated for the duration of the planning period. [SDUPD, Master Plan page 76] The Study's focus complies with the Master Plan guideline: "Existing, established marine-oriented industrial areas that have been devoted to transportation, commerce, industry and manufacturing are encouraged to modernize and to construct necessary facilities within these established areas in order to minimize or eliminate the necessity for future dredging and filling in new areas."

SDUPD, COMPASS, Strategic Plan 2012 – 2017: The COMPASS document establishes the framework for the Study: "The SDUPD will protect the Tidelands Trust resources by providing economic vitality and community benefit through a balanced approach to maritime industry, tourism, water and land recreation, environmental stewardship and public safety".

VI. EVOLVING PRESSURES OF THE MARITIME INDUSTRY:

"A port cannot be planned or designed as an arbitrary arrangement of independent terminals. It cannot even be planned as an independent whole, because the arteries connecting the port to the sea and to the hinterland are as important as the port itself. A port should always be studied and planned in its true node in a complex system." [IAPH Guidelines]

The NCMT Optimization Study utilizes "*bifocal*" vision in looking to the future. This vision is intended to enable the District to have the ability to commit to near term projects and to anticipate future operational efficiencies. Individuals must read and understand these documents based upon the flexible and changing market conditions.

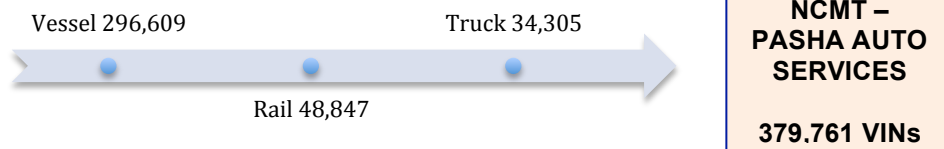
In evaluating new market opportunities for NCMT the Optimization Study focuses on the following:

- **Changing automotive terminal requirements.** The nature of today's port automobile processor is no longer a company primarily and solely dedicated to vehicle processing at the port terminal. Today's processor provides the widest range of services to both the domestic and international markets.

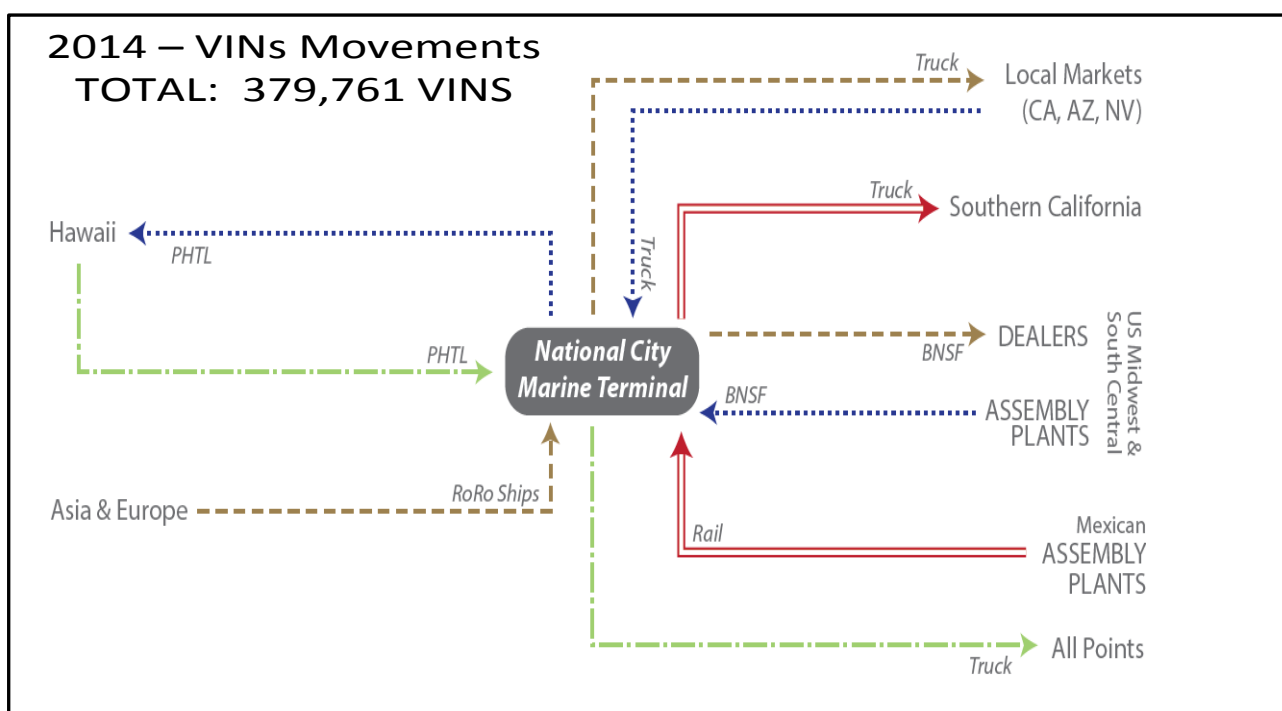
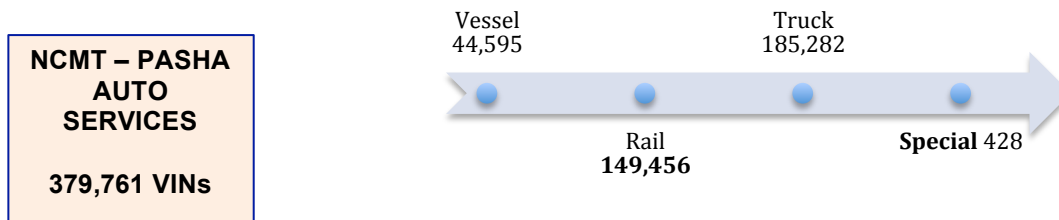
For NCMT, the various types of vehicle handled include private-owned-vehicles (POV) & OEM vehicles arriving by truck and rail for Hawaii destinations (domestic), fleet vehicles (e.g. AVIS, HERTZ, etc.) to and from Hawaii, US and foreign made OEM vehicles for local distribution and Western dealerships, foreign OEM vehicles delivered to the Port for delivery to Midwest and Southwest locations by rail, and import vehicles from Mexico arriving by rail and departing by truck.

Each of these supply chains has a different processing requirement, different dwell time, and different rate structure. In previous reports and studies, all vehicles were lumped into one category. The lumping of these distinct business lines may distort the average dwell and capacity of the terminal. For 2014, 379,761 vehicles arrived at the NCMT – Pasha Automobile Service facilities:

National City Marine Terminal (NCMT) Optimization Study



Vehicles departing NCMT – Pasha Automobile Service facilities by mode were:



Schematic of NCMT Schematic Vehicle Flow (Mercator)

- Growth in containerization.** Growth in containerization is impacting today's non-container "niche" ports and terminals. The recent purchase of Horizon Lines by PASHA may have a direct impact on the domestic Hawaii trade (putting at **RISK** the vehicles that move from San Diego to Hawaii). While PHTL's Roll On and Roll Off cargo operations will continue, due to the purchase of Horizon Lines, the PHTL becomes a container line and PASHA a container operator.

The following is an excerpt from a recent article from the American Shipper in June 2015:

“Pasha, which operates the roll-on/roll-off ship Jean Anne and the combination Ro-Ro / containership Marjorie C between California and Hawaii, said it has assumed operations for all of Horizon’s Hawaii business, including four U.S.-flag containerships, Hawaii Stevedores, Inc., Sea-Logix, which provides trucking services, and Sunrise Operations, a subsidiary that includes Horizon’s Hawaii trade lane vessels and employees.”

George Pasha IV, president and chief executive officer of the Pasha Group said of the deal, “Like Pasha Hawaii, these companies have strong ties to the islands and the mainland, are aligned with our integrated shipping and logistics model, and share our values and community commitment.”

“Since Pasha entered the Hawaii liner-shipping business ten years ago, we have strived to deliver quality shipping options for our commercial and military customers. In 2015, we strengthen that commitment with the deployment of our new tonnage in the Marjorie C and the acquisition of Horizon’s Hawaii service capabilities,” said Pasha. “Our mission is to provide a smooth and seamless transition for Horizon’s customers and employees, and continue to enhance all our customers’ shipping experience through service and choice.”

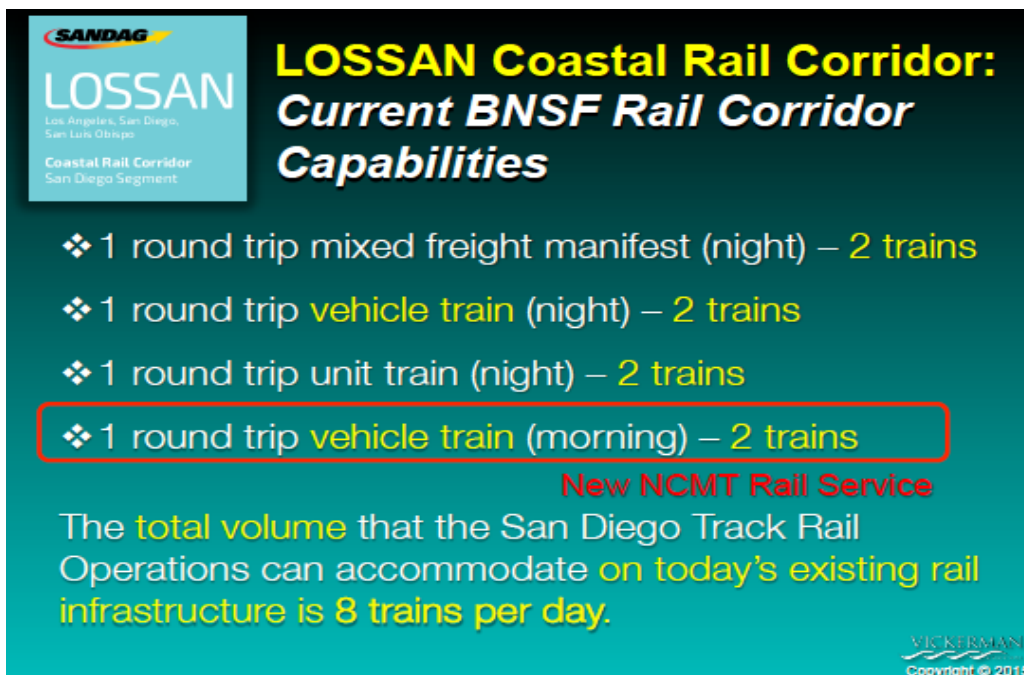
The current Jean Anne service from San Diego is fortnightly. With the establishment of the Hawaii Express Direct service by Horizon Lines, the Optimization Study only includes this fortnightly service. Of the lines of business associated with PASHA at NCMT, the domestic Hawaii business is the most vulnerable to changing market conditions. If the Hawaii service is relocated (either to another port or to another Port of San Diego facility), then new opportunities open at NCMT.

- **Reliance on intermodal rail.** The most obvious constraint on NCMT cargo flow is the intermodal rail service. This constriction in the cargo flow stems from a lack of auto-rack rail car storage in close proximity to the on-dock loading tracks, the lengthy time to assemble a second train utilizing the BNSF switching service in order to meet the mid-morning and mid-day train windows, and the limitation of freight on the North-South mainline (LOSSAN). At some time in the future, the San Diego region will need more than eight (8) trains per day as the basis of its good movements by rail.

The LOSSAN Coastal Rail Corridor is the only viable freight rail link between San Diego and the rest of the nation. During the next 20 years, SANDAG, the planning agency for the Corridor, plans to construct approximately \$ 1 billion of improvements within the 60-mile San Diego segment. Goods movement along this coastal rail corridor is critical to the region’s economic prosperity.

The Optimization Study recommends for the short and medium term to take full advantage of the four vehicle trains per day (2 empty trains delivering rail cars southbound and 2 full vehicle trains northbound). In addition to the NCMT facilities,

the vehicle trains also serve the BNSF Cesar Chavez Yard where Toyota trucks are delivered from Mexico by truck and depart San Diego by rail.



SANDAG
LOSSAN
Los Angeles, San Diego,
San Luis Obispo
Coastal Rail Corridor
San Diego Segment

LOSSAN Coastal Rail Corridor: Current BNSF Rail Corridor Capabilities

- ❖ 1 round trip mixed freight manifest (night) – 2 trains
- ❖ 1 round trip vehicle train (night) – 2 trains
- ❖ 1 round trip unit train (night) – 2 trains
- ❖ 1 round trip vehicle train (morning) – 2 trains

New NCMT Rail Service

The total volume that the San Diego Track Rail Operations can accommodate on today's existing rail infrastructure is 8 trains per day.

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- **Preservation of the Tidelands Trust property to provide the maximum community benefit.** Success in the marketplace requires a degree of certainty on land availability to be clear and concise for the terminal operator to solicit new business opportunities. The 2008 Business Plan also identified negative impacts on the NCMT automobile industry by converting existing maritime industry property to commercial recreational uses. The Optimization Study's focus was to maximize the marine industry property land use without assessing possible and potential gentrification impacts. However, gentrification is one of the critical land-use challenge facing US ports.

The Optimization Study relies heavily on previous work performed by the District staff and NCMT Terminal Operator. The Optimization Study's findings and recommendations are optimum modernization and terminal operational concepts using previous data reviewed and assessed. The concepts discussed are market driven and implementation must follow a successful marketing approach. The Study builds upon the existing terminal conditions, compares existing throughput to terminal capacity, and suggests future customers needs.

VII. 2040 Market Forecast Based on US, State and Regional Gross Domestic Product (GDP) Methodology

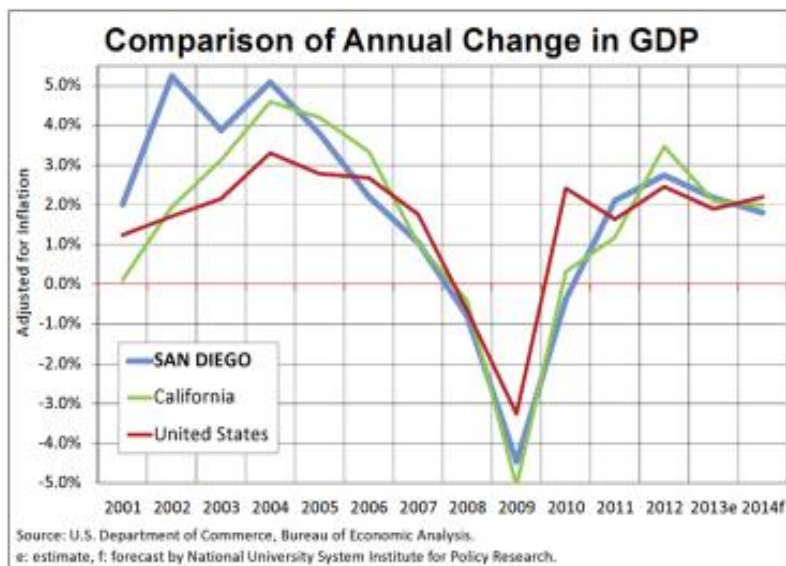
The GDP Market Cargo Forecast for the Port of San Diego includes review and collection of relevant North American, US and Southern California port, truck, and railroad data from private and public sources. The Study's forecast is based on this publically available GDP trade and transportation information on a national, state,

regional and metropolitan basis. On average both historically and looking ahead, the San Diego GDP is closely aligned to both the California and U.S. forecasted GDP growth as evidenced in the chart below.

San Diego Regional GDP is Closely Aligned with Both California & US GDP



Historic Comparison of the Actual GDP for San Diego vs. Both California and the U.S.



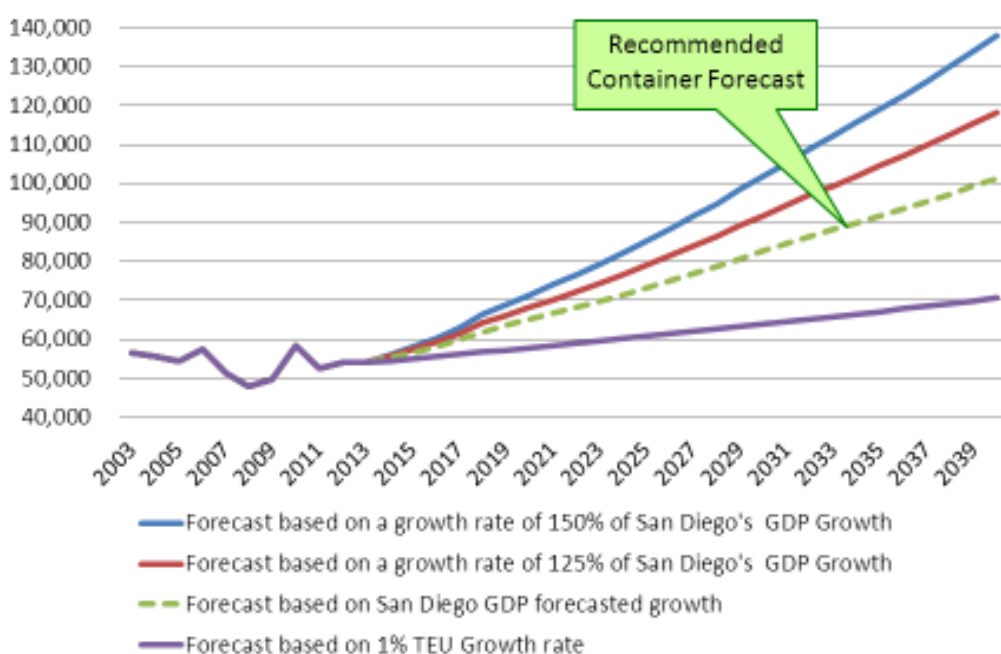
Historic comparison of the actual GDP for San Diego vs. both California and the U.S. exhibiting close alignment is illustrated above.

An Industrial Production forecast prepared by the California Department of

Transportation, Office of State Planning, shows the real industrial production forecast is to grow almost 4% annually for both San Diego and the State of California. This again has a positive impact on San Diego's future trade growth.

To establish a realistic forecast scenario for the NCMT Optimization Study, four cargo market forecast scenarios were prepared for both containers (general cargo) and vehicles. These four cargo market forecast scenarios for containers (general cargo) is shown below. The dotted green line represents the recommended forecast for the Port of San Diego.

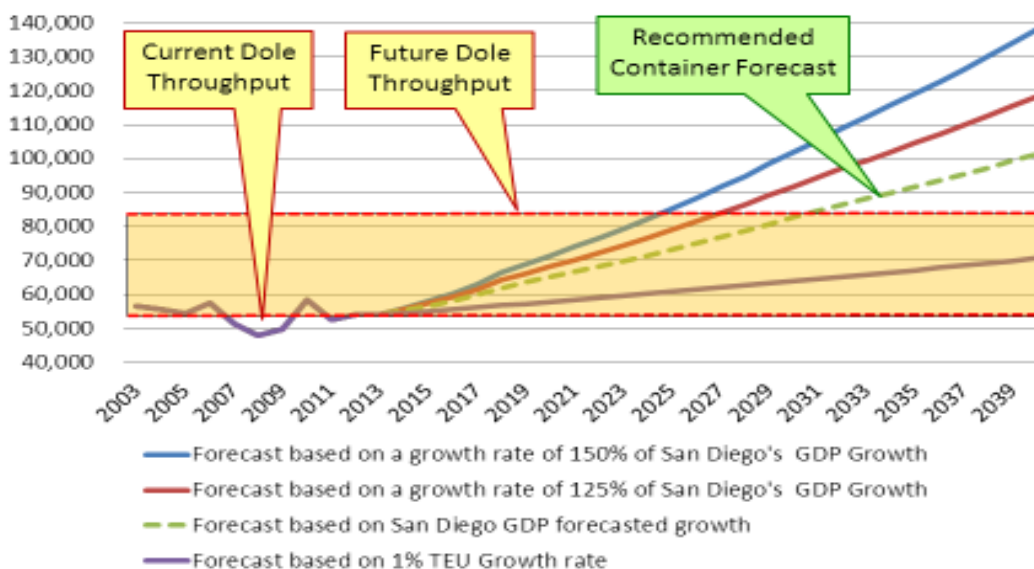
2040 Port of San Diego Container Forecast (Loaded Twenty Foot Equivalent Unit (TEU)s)



Source: Vickerman & Associates 2014

For validation of the recommended container forecast, the forecast was superimposed over the Port of San Diego's Refrigerated Fresh Fruit Terminal capacity:

2040 Port of San Diego Container Forecast (Loaded Twenty Foot Equivalent Unit (TEU)s)



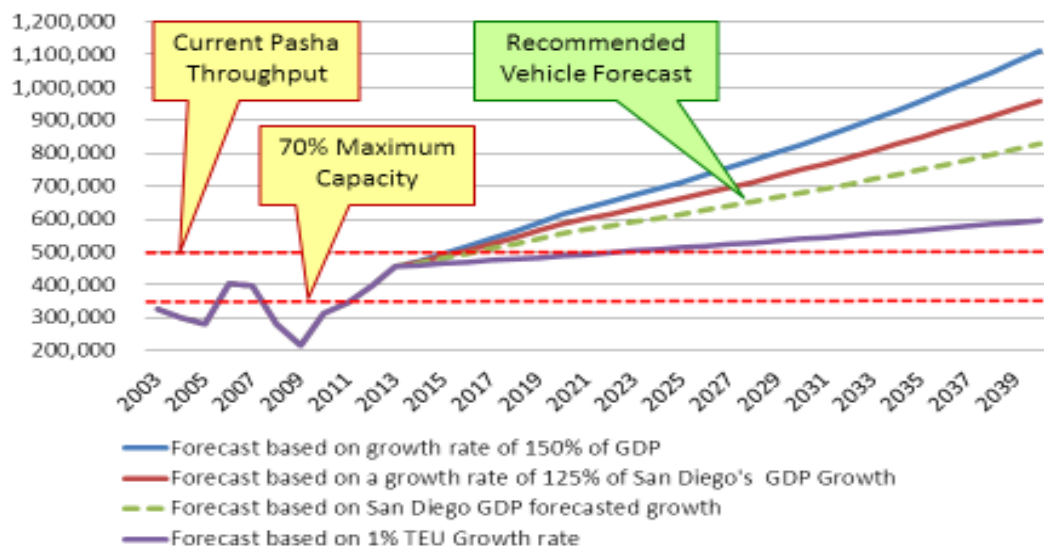
Source: Vickerman & Associates 2014

The recommended general cargo forecast and the future Dole projections for throughput depicted above indicates the recommended forecast is a reasonable projection for the short and medium study horizons to 2039. It must be noted that it is not unreasonable to anticipate that the cargo throughput will achieve either the 125% or 150% level of growth. If the level of growth is higher than the recommended forecast, the SDUPD needs to be prepared to make improvements to optimize cargo throughput.

The vehicle forecast was superimposed over the National City Terminal (Pasha) capacity using the 2008 Business Plan MPC. The Business Plan's MPC for NCMT was 500,000 units and the STC was estimated at 350,000 units. The Study's GDP forecast supports the market forecast that the NCMT can be based on a 800,000 vehicle projection. The short and medium term recommendations, however, show a stepped increase in vehicle throughput.

2040 Port of San Diego Import Vehicle Forecast

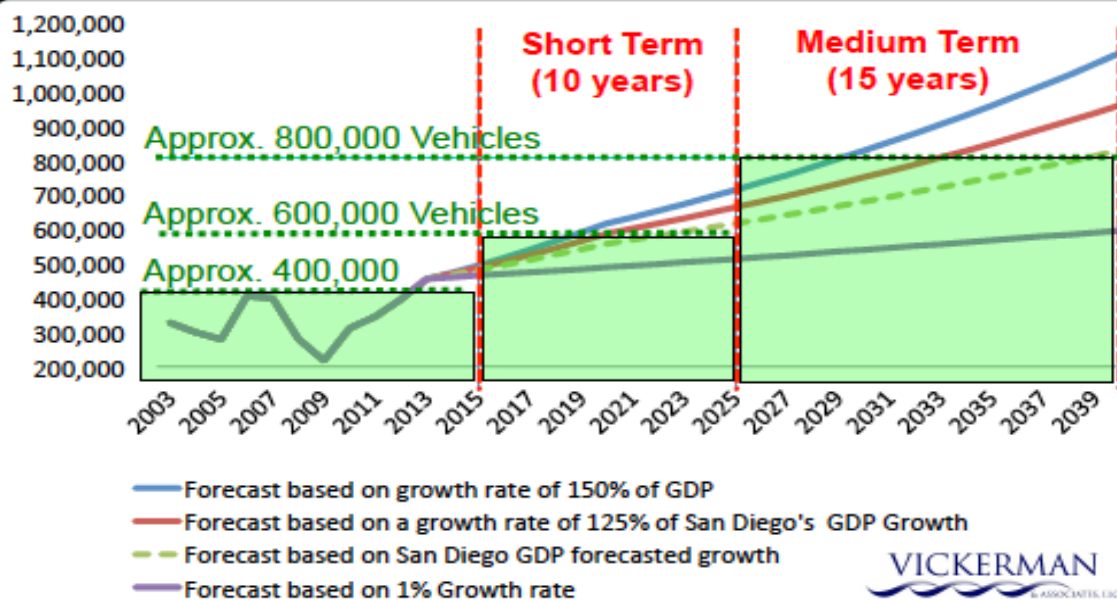
(Including HS Category 87 Vehicles other than RR stock)



Source: Vickerman & Associates 2014

2040 Port of San Diego Import Vehicle Forecast

(Including HS Category 87 Vehicles other than RR stock)



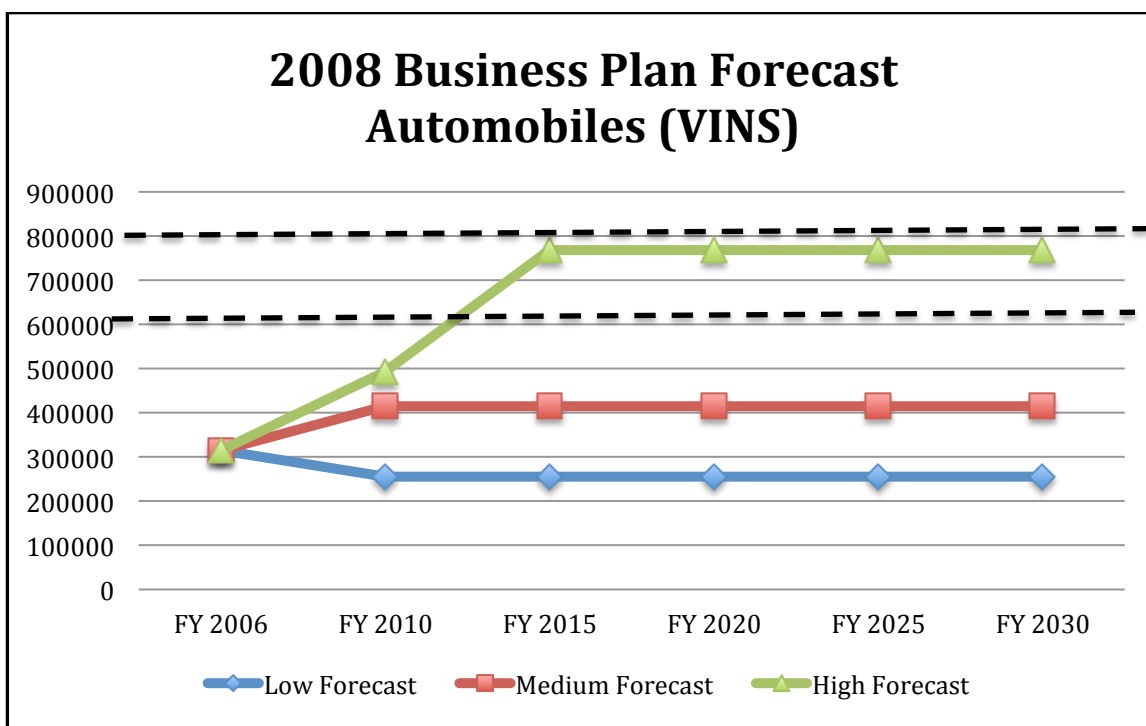
Source: Vickerman & Associates 2014

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TEC 2008 Business Plan (Forecast):

The 2008 Business Plan forecast assumptions were: the low growth scenario forecasted that non-maritime development will occur at National City that would result in a loss of 30 acres for auto storage. Assuming an annual throughput of 2,000 cars per acre per year, this reduced auto throughput by 60,000 units. Under the medium growth, the 30 acres was not lost and the Mazda account remained, but no additional new accounts were acquired. Under the high growth scenario, the Mazda account remained and PASHA captured the Nissan and Toyota accounts from Los Angeles and Long Beach⁴.

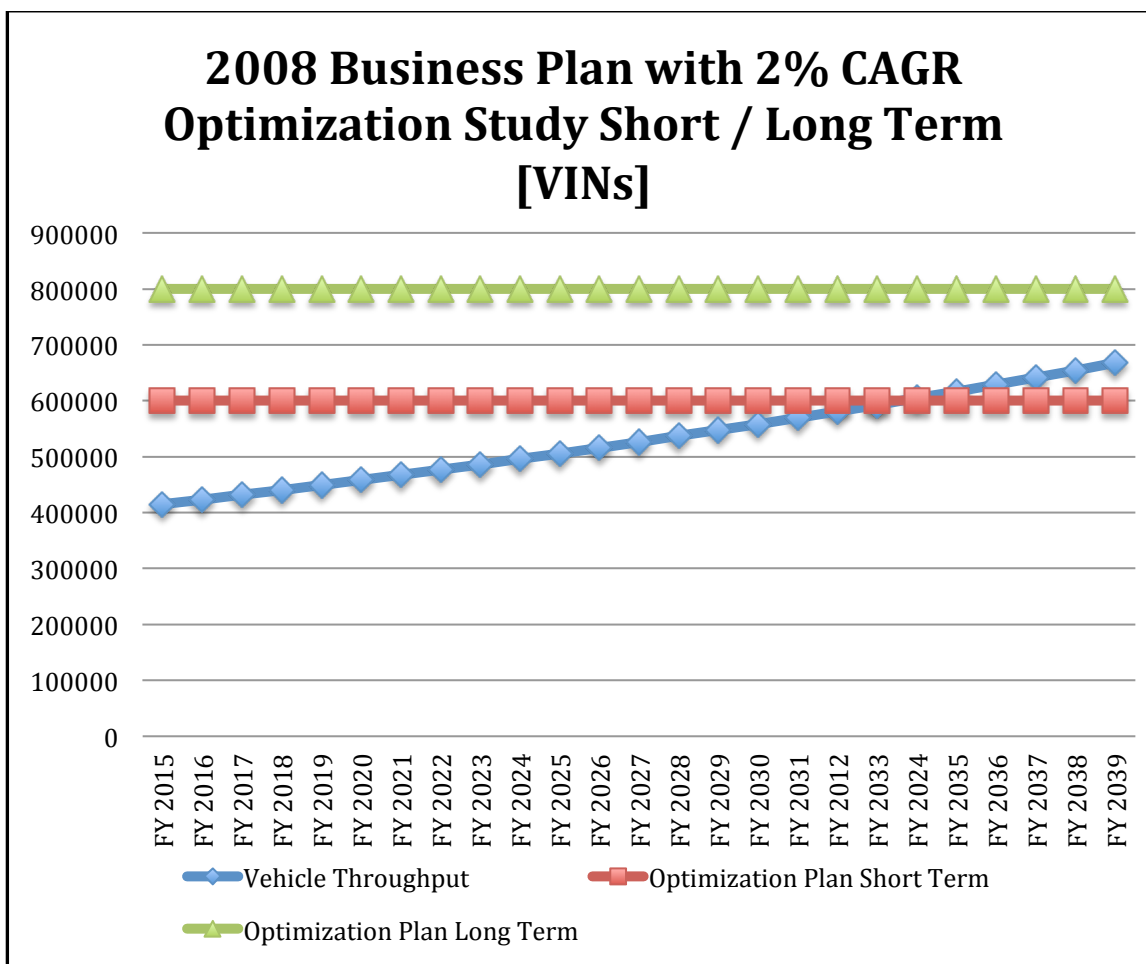
Today, the 2008 low forecast is well below the actual throughput. The loss of 30 acres did not occur, but the potential remains for a loss of property to gentrification. The 2008 medium forecast for 2015 was achieved. To go beyond 2015, the Optimization Study forecasts a growth rate of 2% CAGR for the years after 2015. The high forecast is within the range proposed by the Optimization Study.



2008 BUSINESS PLAN FORECAST

The chart below applies a 2% CAGR to the medium 2015 forecast and demonstrates that the Optimization Study's MPC will not be exceeded in the short and medium time frame and that the STC may be exceeded by 2033. The CAGR growth rate for vehicles in the short and medium term is consistent with the Optimization Study GDP forecast.

⁴ TEC 2008 Business Plan p 4-29



Mercator (2013 and 2014) Forecast:

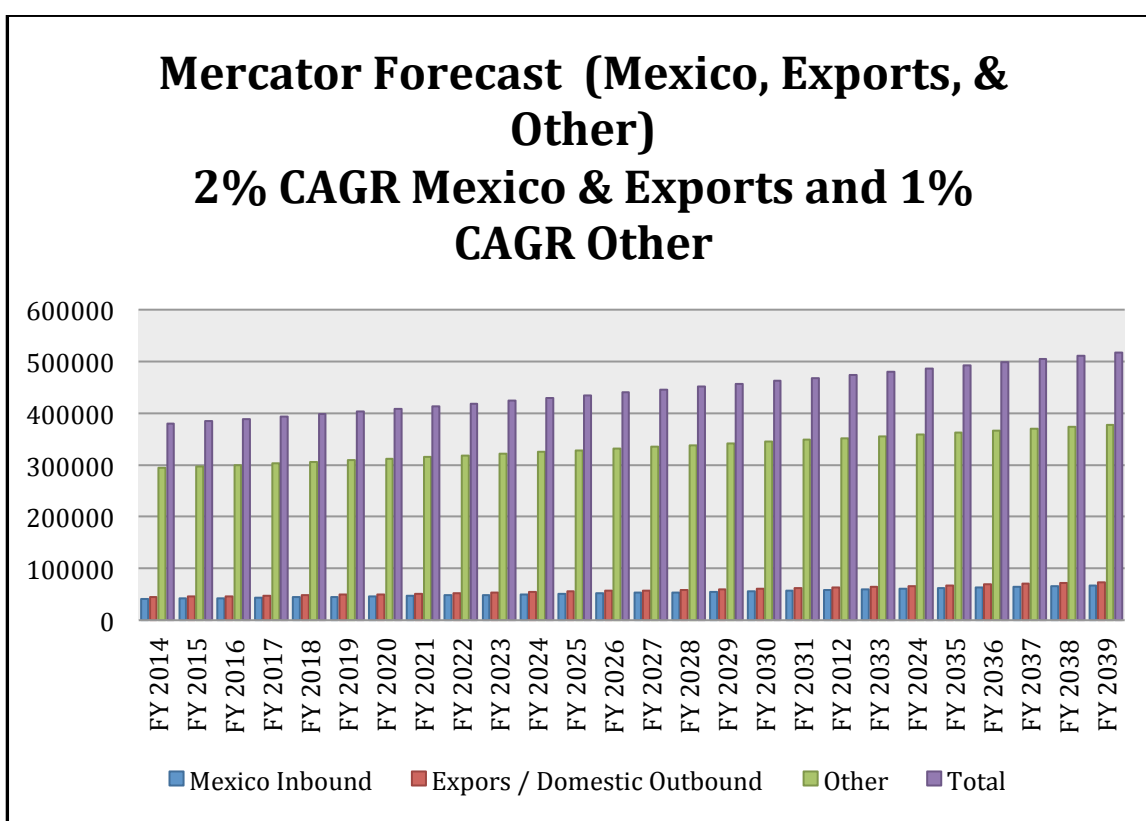
The Optimization Study forecast is also supported by the findings for short and medium terms in the Mercator Reports. Both the Mercator reports and the Optimization Study suggest that there are new business opportunities that will increase throughput at the NCMT. The Optimization Study believes that some of the increase will occur as new incremental rail opportunities. The cargo will arrive or depart by rail. The ability to attract new business opportunities will rely on specific actions taken by the SDUPD and PAS. Some of these actions include ensuring availability of storage land, improving the NCMT Tank farm parcel, adding rail capacity, closing streets, and ultimately relocating non-PAS tenants to realign the terminal. The Optimization Study agrees with the Mercator finding in their 2014 report:

"It is difficult to predict when vehicle manufacturers (the main customers of PAS) might choose to change their gateway port, but the vehicle business is dynamic and customers continuously seek to improve the efficiency of their logistics chain to increase flexibility and drive down costs."

Mercator identified Mexico and US exports as the two market factors that will drive growth. The Optimization Study agrees with these market forecast drivers. Mercator also identified shifting of activity within the current San Diego market as a potential

capacity factor. The shifting is to relocate certain activities from the BNSF Rail Yard to National City (primarily TOYOTA truck activities). For PAS, this shifting would make the current Cesar Chavez BNSF Rail Yard near TAMT available to receive imports / exports. A “pilot test” of this was conducted by unloading Mazda’s at TAMT using the BNSF Rail Yard as a “First Point of Rest” (FPR). The possibility of this type of shifting has not been confirmed by BNSF, and this BNSF facility is outside of the Study boundaries.

The Mercator Report’s forecast for overall growth at NCMT is 3% CAGR. This rate is higher than the Optimization Study. Mercator forecasts that there will be a 1% organic market growth for existing accounts plus a 2% growth for new traffic flows from Mexico and new exports. The graph below shows the application of the Mercator CAGR to the 2014 actuals.



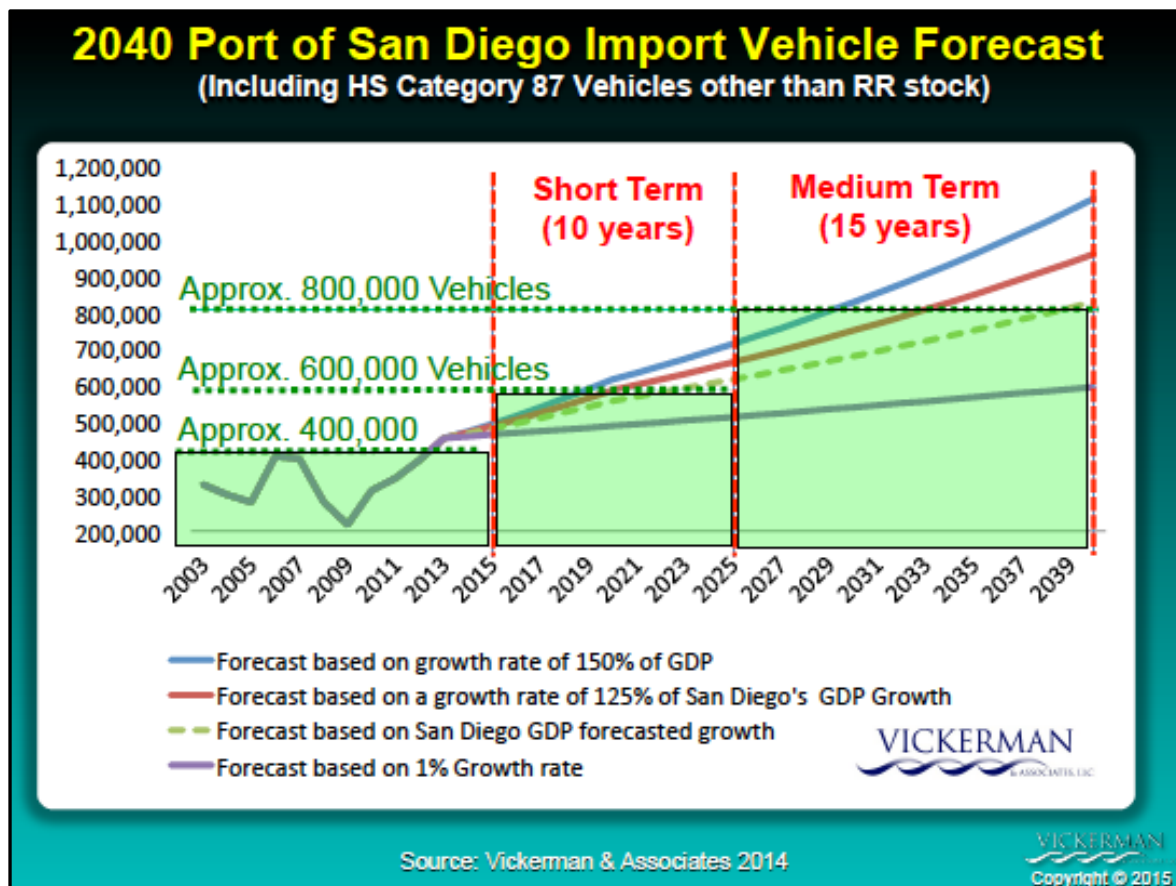
Mercator Forecast Short & Medium

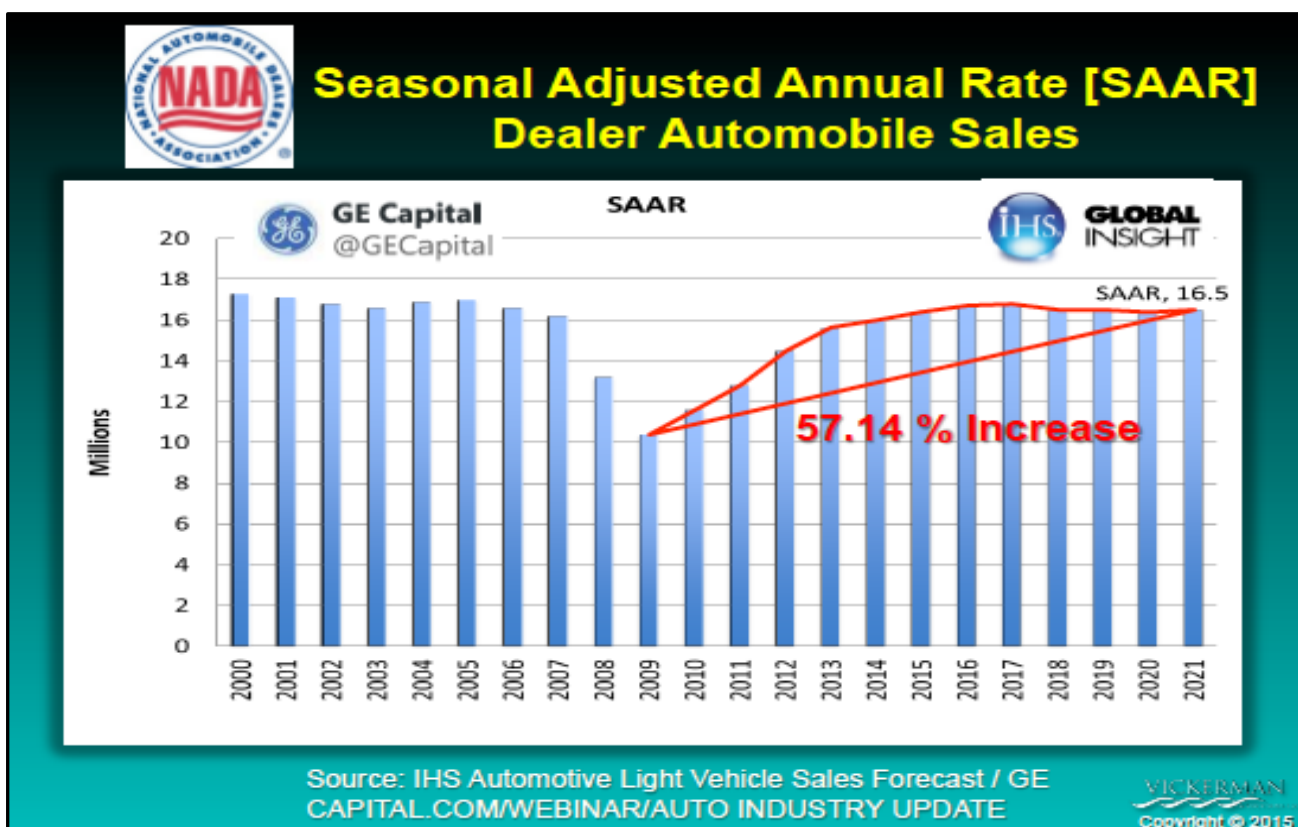
Using the Mercator forecast trade, for the short and medium term, the total OEM’s from Mexico will increase from 40,960 to 67,199 by 2039, outbound vehicles by vessel (export & domestic) will increase from 44,595 to 73,163, and other OEM traffic will increase from 294,206 to 377,299. By 2039, the Mercator forecast estimates a throughput for the NCMT terminal of 517,661.

This forecast is lower than the Optimization forecast recommendation since the 1% CAGR for the OEM traffic is lower than the GDP forecast projection. If you apply the 2% CAGR to the OEM traffic, the total 2039 volume increases to 623,038 which is consistent with the findings of the Optimization Study.

OPTIMIZATION STUDY FORECAST:

After reviewing the findings of the TEC 2008 Business Plan and the Mercator Reports (2013 and 2014), the Optimization Study forecast for the 2040+ Port of San Diego Import / Export Vehicle Forecast has been verified. As a market-driven Study, the forecast is a major component for the findings and recommendations. The approach taken by the NCMT Study is to subtract terminal capacity from forecasted demand and the results is required terminal need [Forecast less Capacity = Need].





The NCMT Optimization Study also used the National Automobile Dealership Association Seasonal Adjusted Annual Rate (SAAR) showing sales. This is a proven indicator for volume of sales within the US and sales has been shown to have a direct impact on the import of OEM vehicles to the US. Note the dramatic growth in sales from the 2009 to 2021 years (57.14%).

VIII. NCMT AND THE US AUTO MARKET:

Although NCMT has different operating nodes, lumber, domestic Hawaii, and international automobiles, it is the use of NCMT as a primary West Coast Auto Terminal that drives the market segment and forecast. NCMT has been compared and ranked with other West Coast terminals, but due to the distinct nature of the NCMT operations making such comparisons is somewhat meaningless.

The Optimization Study's assessment of NCMT in associated with the US automobile market is discussed in this section. The Study does not discuss every port or automobile terminal the focus is on terminals that have the same OEM's as NCMT.

When analyzing the US port industry, the ports that have a major container line of business often view the automobile business as a secondary and "niche" business. In the past, Southern California port executives viewed the automobile terminal as an interim use until the open paved-land is needed for containers. This provided a marketing opportunity for smaller regional ports. The Ports of Hueneme and San Diego viewed the automobile industry as a large load center customer. The Optimization Study

views the automobile terminal operator at NCMT as a major load center would view the container terminal operator or steamship line.

The Ports of Hueneme and San Diego

In the same manner as Los Angeles and Long Beach view each other as chief competitors the Ports of Hueneme and San Diego view each other as major competitor. There are significant differences, however, in operations and capabilities between these two ports.

The Port of Hueneme has three major agreements: BMW of North America, Wallenius-Wilhelmsen Logistics (WWL), and Global Auto Processors (GAPS). The BMW and WWL agreements establish certain space allocations for the First-Point-Of-Rest (FPR) on the terminal. Processing and distribution activities occur 1.5 miles away from the terminal property on land owned by the respective companies. GAPS⁵, on the other hand, leases property from the US Navy (approximately 54 acres) and performs processing and distribution on the Navy land. The FPR for GAPS is Navy property that is approximately 1.5 miles from the Port of Hueneme berths. The Port of Hueneme reports that they handle 5% of the US car volume and 13.4% of the West Coast volume [see www.portofhueneme.org]. The Port handles this volume with approximately 8,000 FPR slots on approximately 35 to 40 acres. Velocity is the key to the Port of Hueneme's success.

The Port of San Diego and US Port Regions

Using ZEPOL data for 2013 and 2014, the Optimization Study selected US Port regions that handle OEM vehicles similar to NCMT. The use of ZEPOL data may not necessarily capture 100% of the automobile volume due to coding and other issues, but the data does provide a good representative market assessment. Light trucks, such as Hino, are not included in the analysis.

The selected OEM's for the study were:

- Mazda Motors of America
- Kia Motors of America
- Hyundai
- Porsche
- Bentley
- Lamborghini
- Audi
- Volkswagen
- Honda
- Isuzu
- Mitsubishi

⁵ GAPS recently has been purchased by GLOVIS the logistic company for Hyundai and Kia

The following regions were also selected:

- Pacific Southwest (Southern California)
- Pacific Northwest
- US Northeast
- US Mid-Atlantic
- Gulf

In the **Pacific Southwest (Southern California)** market, according to the 2014 ZEPOL Data for the selected OEM's, imported 362,000 units. San Diego and Hueneme handled 100% of this volume (San Diego 68% and Hueneme 32%). Mazda's volume in San Diego was 41% (101,000 units). The growth in number of vehicles 2014 compared to 2013 for the two ports was: 7% growth for San Diego and 13% growth for Hueneme. In the past, Mazda relocated from Hueneme to San Diego due to land constraints and the ability to get better intermodal services to Texas. Land constraints and intermodal services are critical competitive factors for automobile terminal operators. San Diego and Hueneme share the Kia and Hyundai automobile Korean GLOVIS traffic. GLOVIS is the logistics provider for Hyundai and Kia and in the past has expressed a desire to reduce ports-of-call and to consolidate West Coast services. Their desire is to have one Northwest port and one Southwest port. The lack of space to accommodate this consolidation has been the market constraint. According to ZEPOL, the volumes for GLOVIS are 166,800 units.⁶ If the Port of San Diego and PAS was able to implement a Plan that provides more land capacity at NCMT, the estimated Hueneme volumes that could relocate to San Diego may be 92,000 vehicles.

Within the Southern California automobile markets, the Optimization Study and the Mercator Reports support the following market factors:

- There are new business opportunities that will increase automobile throughput.
- The increase in automobile throughput will arrive or depart the NCMT by rail. The Study's targeted metric for the intermodal split between truck and rail is 50:50.
- NCMT's ability to achieve growth and forecasted throughput is dependent on the BNSF and the current LOSSAN corridor to support these freight movement projections.
- The optimization operations at NCMT must be implemented to receive vessels that deliver imports/exports on a fluctuated weekly basis.

The key to the Southern California intermodal automobile market is to continue as a gateway for Far Eastern automobiles destined for both the Southern California market and Inland destinations (e.g. Texas). For example, the current two NCMT Customers that rely on the BNSF automotive intermodal services are Mazda (Japan) and Kia (Korea). These two accounts represent 100% of the eastbound intermodal services from NCMT, and they both use the San Diego gateway for a Texas location (BNSF Alliance Intermodal Terminal, Haslet, Texas).

The two Far East markets for Southern California that the Optimization Study suggests

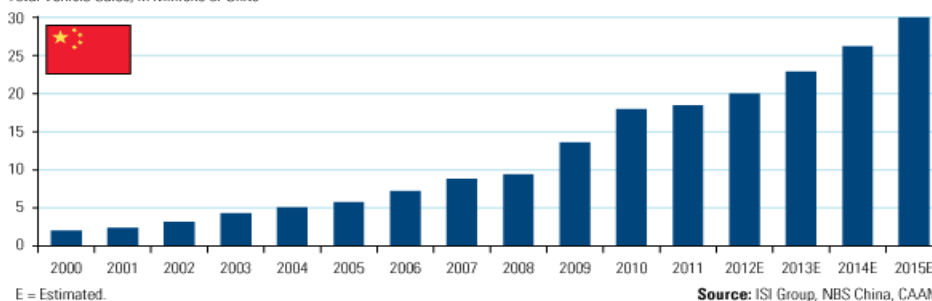
⁶ Based upon actual Port estimates this volume could be higher.

focusing on are China and India. Of these two markets, **India** may represent the earlier opportunity. In a March 2015, Wall Street Journal, it was reported: “*Ford Motor Co. on Thursday opened a new factory in western India, more than doubling its capacity in the country as it makes a billion-dollar bet that Indian exports can power its push to sell more affordable vehicles around the world.*” Likewise, in June, the New Indian Express reported “*Automobile exports from India grew 14.89 per cent in 2014-15 compared to 7.2 per cent in the domestic market.*” The important aspect of this report was that domestic sale of automobiles in India stood at 19,752,580 units (up 7.2 per cent) while exports stood at 35,73,806 units (up 14.8 per cent) in Fy15. The reported stated: “*Exports have grown almost 100 per cent from 1,804,426 units in 2009-10 while domestic market sales growth has been around 60 per cent from 12,295,397 units.*” The Optimization Study sees this trend continuing. However, one of the critical challenges is the potential for some of this trade to seek the Suez Canal as an alternative to the traditional transpacific route.

The **China** market has been an anticipated new West Coast opportunity for automobiles for the past fifteen years. However, the Chinese automobile market has maintained its focus on the Chinese consumer market. With the opportunities in that market, the export market does not offer the same growth opportunities. According to the Chinese Association of Automobile Manufacturers (CAAM), China has seen dramatic growth in the sales of automobiles in China. Since 2009, China has been the world’s largest new car market and automobile producer, The Chinese automotive import and export industry accounted for ¼ of global production capacity as of 2011. The share of passenger car and commercial vehicle exports as part of the production output in China accounted for 4.6% and a total of 850,000 vehicles were shipped from China to various places around the world.

The Growing Car Culture in China Total Vehicle Sales in millions of Units

The Growing Car Culture in China
Total Vehicle Sales, in Millions of Units



In the **Pacific Northwest (PNW)** market, the selected OEMs imported 298,500 units in 2014. Tacoma and Portland handled 98% of this volume (Tacoma 70% and Portland 27%). Tacoma, like San Diego, has a sole agreement with an automobile processor (Auto Warehousing Company), but the Port Authority is responsible for designating the FPR area. The Mazda volume in Tacoma is primarily intermodal traffic by rail to the Mid-West market. Today, the GLOVIS volume is divided between Tacoma and Portland with the same automobile processor at the each port. Like California, GLOVIS has expressed an interest to consolidate its operations into one PNW port-of-call. It is unlikely for volume that goes through the PNW to relocate to California.

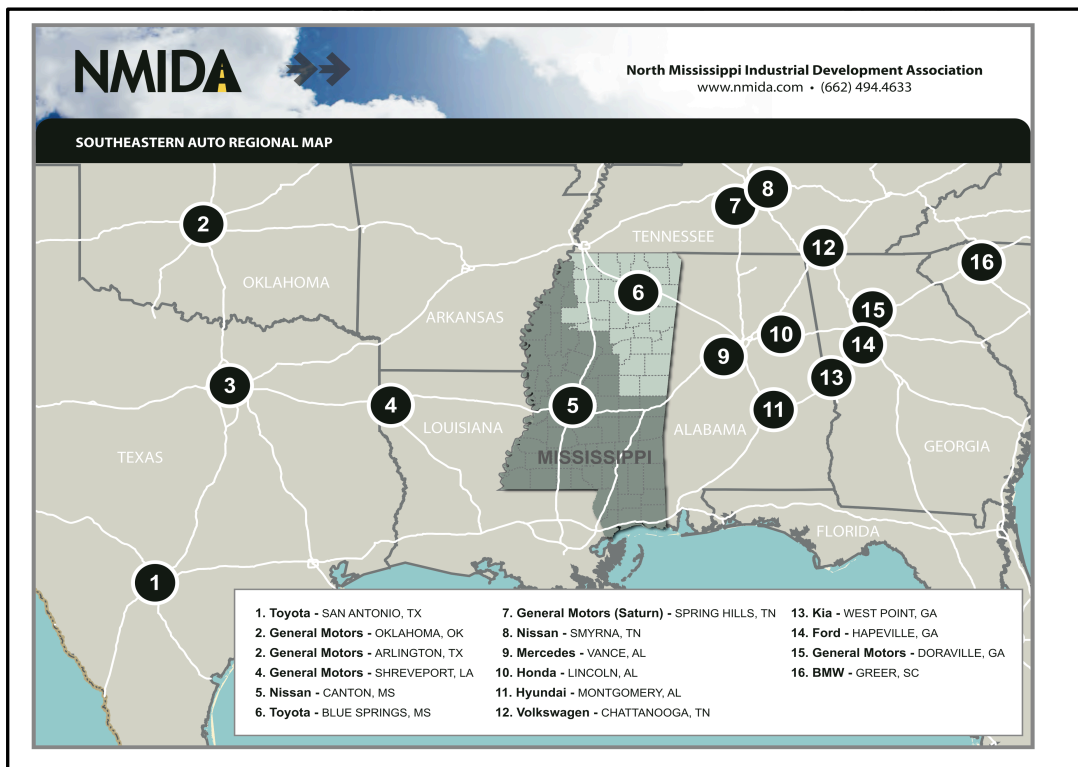
In the **Northeast** market (Providence, Newark & Philadelphia) in 2014 imported 260,700 units of the selected OEM vehicles. Providence and Philadelphia handle nearly 100% of these OEMs. Providence handled over 125,000 units of the Volkswagen Group automobiles. And, the Philadelphia market consists of approximately 100,000 units associated with the GLOVIS group.

In the **South Atlantic** market in 2014 the selected OEMs imported 453,000 units. The largest load center in this market is the Georgia Port Authorities Brunswick facilities handling 73% of the regions imports. The Port of Brunswick imports consist of both the GLOVIS and Volkswagen groups.

Finally, the **Gulf** market handles the least amount of units 75,000. The Volkswagen utilizes the Ports of Houston and Galveston as gateway ports to the large Texas market. The Gulf region has the greatest potential of taking European volume from the West Coast. In fact, it has been reported that BMW has opened a US Gulf gateway port in order to reduce the supply chain time to their Texas dealers. This will take market share from Hueneme.

The automotive import and export markets and service industries are keenly competitive. Some of the business influences that will directly impact the market are:

1. **Transplanted Automobile Manufacturers:** In 2014 Honda set an all-time annual auto production record in the US and North America. At the same time, Honda shipped more American made cars from the US than they imported from Japan. As the US becomes an exporter of US made cars, NCMT, the terminal operator, and BNSF railroad have marketing strategies that will attract exports to San Diego. While San Diego's competitive position with respect to the railroad will benefit from new exports, exports take longer to accumulate on the dock; therefore, the dwell time is longer than imports. Terminal land availability will be a major factor to attract these exports to San Diego.



2. **Mexico:** In 2014, Mexico was poised to surpass Japan as the largest source for US Auto imports. Mexican auto exports quadrupled from 1993 to 2013, according to Bloomberg. Honda, Nissan, and Toyota have been encouraged by the NAFTA agreement to move production facilities to Mexico. As the primary cross-border port entry, San Diego may be able to attract additional Mexican production either by rail or short-sea shipping from Mexico.



Following several tests with the Auto-Max (automobile rail car), Volkswagen evaluated storage, loading, and security factors; the results were that VW uses KCS (Kansas City Central Railway) and BNSF to transport vehicles to a mixing facility in Houston. There, the vehicles are off-loaded, combined with imported Volkswagen models, reloaded, and sent to U.S. and Canadian destinations.

IX. Berth Occupancy and NCMT Schematic Analysis:

The Optimization Study findings regarding berth occupancy, capacity and analysis are based upon three primary documents:

1. Port Master Plan 2012
2. Desman Associates Wharf Extension Phase II (Unified Port of San Diego Maritime Improvements) 2008.
3. Berth Utilization Report prepared by the SDUPD Operations Department for this Study. (2014 - 2015)

Federal Navigational Channel

The Federal navigational entrance channel characteristics in the San Diego Bay, with regards to the mean lower low water (MLLW) datum, is accepted as unchanged. With

the current composition of tenants at NCMT, water depth in the channel beyond the Coronado Bridge and at NCMT is not a constraint for future growth. Auto carriers, the current Hawaii Ro/Ro vessel, and the new Hawaii Con/Ro vessel⁷ do not require water depths greater than 35 feet MLLW. The coastwise lumber service employ barges that require far less than 35 feet MLLW.

There are no recommended changes to the Navigational channels and/or berth side depths in the NCMT Optimization Study. If the SDUPD considers alternative development concepts other than those identified by the Study, draft restrictions may exist.

NCMT Vessel Berths

NCMT has eight (8) operating berths totaling 5,965 feet. The berths are numbered starting at the north end, progressing counter-clockwise around the facility. The north face, Berths 24-1 and 24-2 is roughly 1,406 feet long. The water depth alongside Berth 24-1 is limited to 20-feet MLLW because of structural constraints of the wharf seawall. The remaining Berths all operate at 35-feet MLLW. Berths 24-3 to 24-6 face west on San Diego Bay and the total length is 3,063 feet. Berth 24-10 and 24-11 on the Sweetwater Channel is 1498 feet. The southwest corner of the terminal has an area that is unfinished leaving room for the SDUPD to construct future berths.

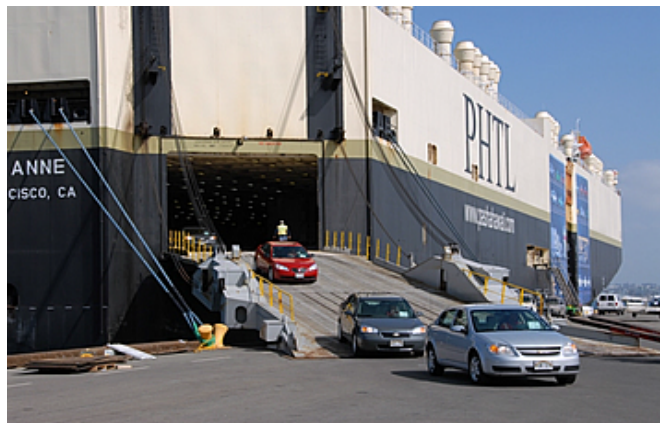
Berths	Length	Depth Berth-side	Primary Customer
24-1 & 24-2	1,406 lf	20 ' to 30 ' MLLW	PHTL
24-3, 24-4, 24-5 & 24-6	3,063 lf	35' MLLW	Automobile PCC & PCTC carriers
24-10 & 24-11	1,498 lf	35' MLLW	Automobile PCC & PCTC carriers Coastwise Barge

According to the Berth Utilization Report, the PHTL MV Jean Anne calls on a fortnightly schedule at 24-2.⁸

In fiscal year 2012 - 2013 NCMT, there were 197 automobile vessel calls and over 90% of these calls occurred at 24-5 and 24-10.

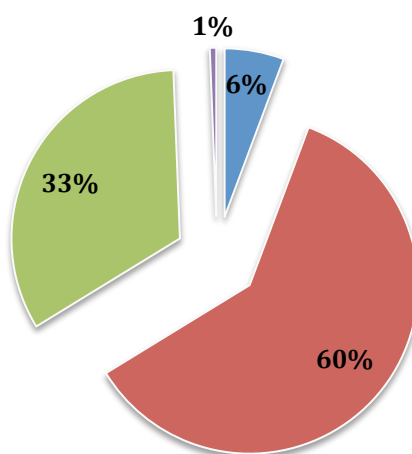
⁷ Currently scheduled to call in LA not at NCMT

⁸ The berth utilization report only shows the Jean Anne assigned to 24-2, however, in actuality when available the Jean Anne may berth at the westerly berths.



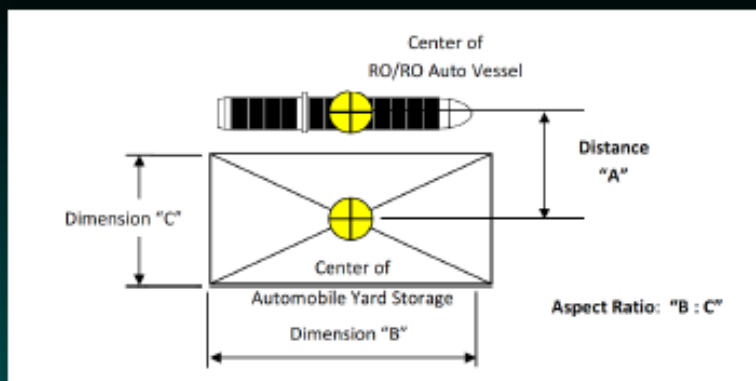
NCMT Berth Utilization

■ 24-4 ■ 24-5 ■ 24-10 ■ 24-11



Berth utilization is an important element of assessing a terminal's layout. It impacts two of the six model components used to determine throughput capacity. In an ideal automobile terminal storage yard layout, the center of the Ro/Ro Auto Vessel and the Center of the Automobile Yard should match up.

Terminal Storage Yard Layout & Geometry Implications



The greater Distance "A" will:

- (1) The greater the distance and time it will take to convey both import and export auto units between the auto storage yard centroid and the RO/RO vessel center of all units.
- (2) Increase the cycle times for all units transferred to and from the vessel.
- (3) Increase the labor time and labor cost per unit cycle for processing the hundreds of import and export units.

VICKERMAN
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The Study found that at NCMT, with the intermodal rail car loading yard in its present location, the automobile yard has different optimum areas to support the unloading of the vessel. In some cases, depending on the berth used and the FPR available, the terminal operator has long-distances to travel during ship-to-apron discharge. This results in longer travel time and higher labor costs, and results in the operator not being able to provide the "best service at the lowest cost".

Another factor that impacts the terminal's ability to handle growth is the nature of the global automobile vessel schedule. The frequency and schedule of the Pure Car Carrier (PCC) and the Pure Car and Truck Carrier (PCTC) are completely outside of the control of the terminal operator. The volume and port rotation may change on a daily basis; this makes the planning of the terminal layout one of the foremost challenges for the operator. The number of PCC and PCTC vessel calls will fluctuate (1 to 7) on a week-to-week basis. It should be noted, however, that this is not unique to NCMT. Managing the vessel schedules is a key responsibility for the terminal operator, and for some port authorities the port's operations department.

The Optimization Study reviewed multiple months of vessel calls to determine the volume of the discharge, the amount of space needed for a FPR prior to the vessel arrival, and the amount of storage area needed after discharge. Typically, the terminal operator must have adequate open storage area to accept each vessel's cargo prior to its arrival. The terminal operator also needs to recognize that for each vessel there may

be different priorities. For example, prior to discharge the automobile importer will provide a list of hot VIN numbers that must be moved in the shortest amount of time (the lowest dwell on the terminal). Intermodal traffic will also have a short dwell and in some terminals these automobiles are moved directly to the rail load lines. And, finally, automobiles that have not been allocated by the OEM to dealers will have the longest potential dwell, and they may have to be moved to a long-term storage area.

To describe the nature of the vessel and berth-to-apron operations, three typical months are provided below⁹:

Month (2014)	Number of Vessels	VINs Discharged	Smallest Vessel Discharge	Largest Vessel Discharge	Average Vessel Discharge
February	13	17956	367	2285	1381
July	15	21136	16	3058	1409
September	13	18890	13	2126	1259

In February, Berth 10 was used 54% of the time. In July and September, Berth 05 was used 60% and 53% respectively. For some of the smallest discharges, Berth 04 was used.

For the largest discharge in July (3058 units), the terminal operator needed approximately 20 acres¹⁰ of open, paved land as the FPR. But, during the same week as the largest discharge, the terminal operator had another 3,755 units arriving shortly after this largest discharge. Therefore, for these four days in July the terminal operator required at least 44 acres of open, paved land as the FPR for these four vessels. It is not suggested that a terminal be designed to accommodate all peak operations. The terminal operator must, however, have the ability and flexibility to address the peak operations as they occur.

NCMT Berth Expansion

The SDUPD Master Plan identified an extension at NCMT to extend the west apron by 2,400 feet to the south, then 1,000 feet east to connect to the existing Sweetwater Wharf. The total wharf space at the NCMT would then be about 7,800 linear feet. The reason cited in the Master Plan for this expansion was to accommodate a container terminal. The Optimization Study does not propose any change of use to the NCMT and recommends that it remain an Omni type of terminal dedicated to domestic coastwise trade and automobile imports/exports.

In 2008, in association with a statewide effort to invest in new capital projects at local ports, the SDUPD engaged the Desmond Associates to assess the need for a Wharf Extension at NCMT. The report recommended a pile-support structure that would achieve the extensions proposed in the Port Master Plan. According to this Report the

⁹ Source: SDUPD Berth Utilization Report

¹⁰ The acres were determined based upon a FPR layout that accommodates 154 vehicles per acre.

type of cargos that would benefit include automobiles, lumber and military support cargo. The 2008 estimate for this extension was \$ 35.8 million



While the Optimization Study shows a long-term (2040+) concept to extend the NCMT wharf, consistent with the Port Master Plan, *the Study recommends that the Wharf/Quay Expansion not occur at this time.* The market will dictate the need for this type of major improvement.

The NCMT berth capacity findings are as follows:

- NCMT has berth capacity capable to support additional cargo and customers.
- New capital investment, to expand or extend the current berthing configuration, is not necessary in the short and medium-planning horizon (2015 to 2030).
- The District may wish to investigate adding an extension under a long term planning horizon if and when the market supports such a project.
- The District needs to explore the possibilities of re-establishing a coastwise barge service between Longview, WA, and San Diego to provide modal options for Dixieline. This will add to the NCMT's vessel utilization.
- In the event the domestic Hawaii Service is relocated from NCMT (either to another port or to another Port of San Diego facility), it is recommended that Berth 24-1 be used for the coastwise barge service due to the depth restrictions. A small portion of the terminal can then be used as the immediate storage for the lumber prior to transport to Dixieline¹¹. This will make the seven-acre lumber storage area, or a portion thereof, located near 24-11 available for automobile storage.
- The District needs to continue to monitor and evaluate the structural integrity of the wharves and berths as part of its asset management program.

X. NCMT CARGO, WAREHOUSE, AND DISTRIBUTION

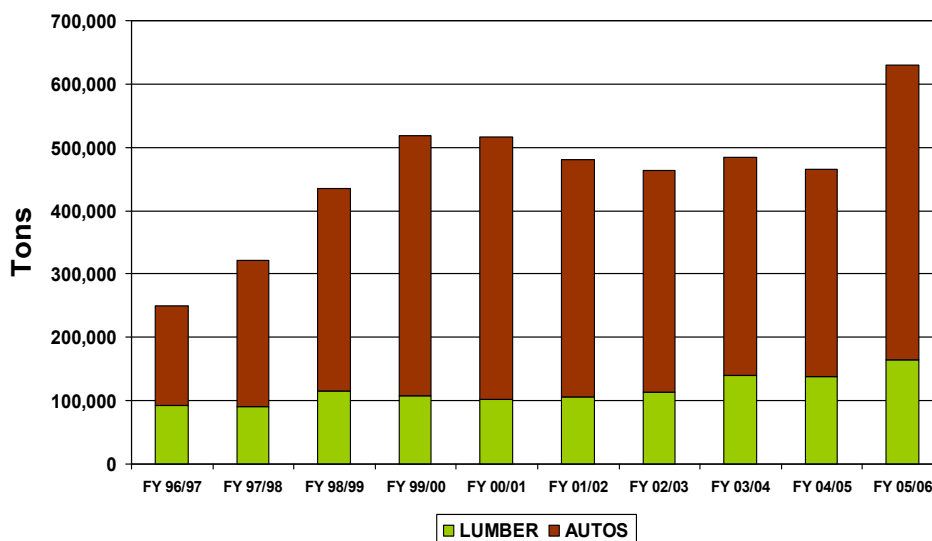
This section of the NCMT Optimization Report discusses the cargo operations and warehouse and distribution activities associated with the NCMT. The section is divided into the following sub-sections:

1. International imports/exports - Automobiles
2. Coastwise domestic trade – Hawaii
3. Coastwise domestic trade – Pacific Northwest (Lumber)

¹¹ The relocation needs to accommodate the same labor operations as currently exists at 24-11.

4. Warehouse and Distribution activities – National Distribution Center

The NCMT Cargo throughput and trends from FY 02/03 to FY 05/06 are shown below from the 2008 Business Plan :



In Fiscal Year 05/06, the automobile units accounted for 314,000 units. Each automobile to be 1.47 m/ts per automobile¹²; therefore, the FY 05/06 automobile equivalent in metric tons for this period was 461,580 m/t's.

While the Optimization Study prefers units or VINs for automobiles/vehicles, the 2008 Plan depicts the overall historical trend of cargo for NCMT in tons. The above chart shows a relative steady cargo throughput for NCMT between the years FY 1999 - 2000 to FY 2004 - 2005. A peak in lumber and automobiles occurred in FY 2005 - 2006. While the 2008 Plan calculated the MPC (Storage) for NCMT at 1,170,375 metric tons, the FY 2005 - 2006 peak was 629,131 metric ton. This is 54% of the MPC, and it is below the STC suggested by the Optimization Study as a trigger for implementing new strategies to expand the MPC.

The 2008 Business Plan also did not reflect the Hawaii coastwise domestic trade that has become a staple at NCMT, and since FY 2005 - 2006 the coastwise waterborne service to San Diego for lumber has ended. Today the lumber is discharged at the Port of Long Beach and trucked to NCMT.

International imports/exports - Automobiles

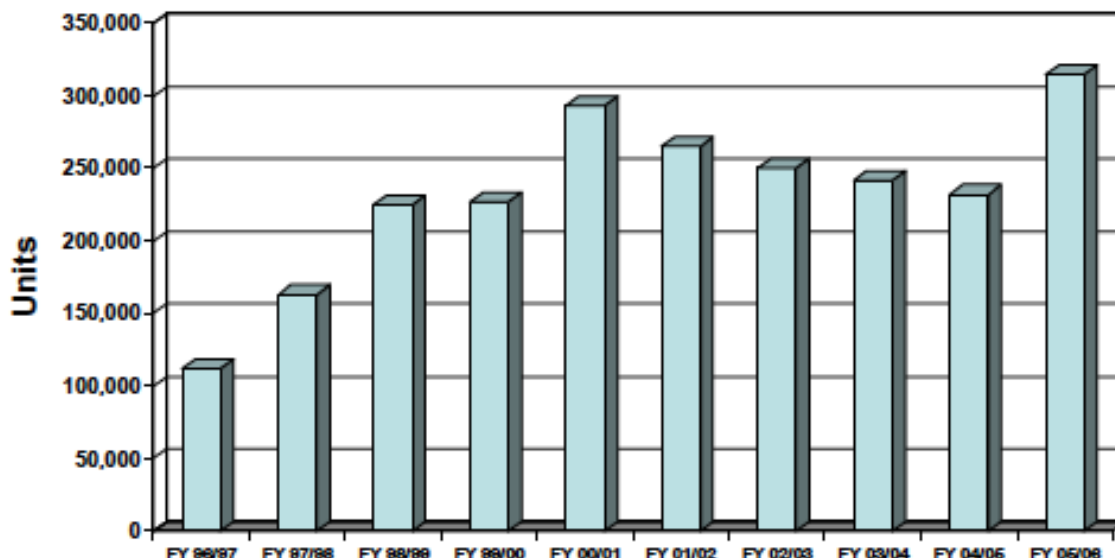
A review of the FY 2005 / 2006 auto units that moved via NCMT shows the following composition of vehicles:

- 200,000 units Honda/Acura
- 65,000 units VW/Audi (of which 25,000 are railed in from Mexico)
- 50,000 units GM
- 12,000 units Porsche
- 1,500 units Bentley

¹² SDUPD estimate

- 25,000 units Isuzu (Est. in the Plan)

In 2005 – 2006, the Terminal Operator signed a contract to handle 100,000 units of Mazda beginning in 2007.



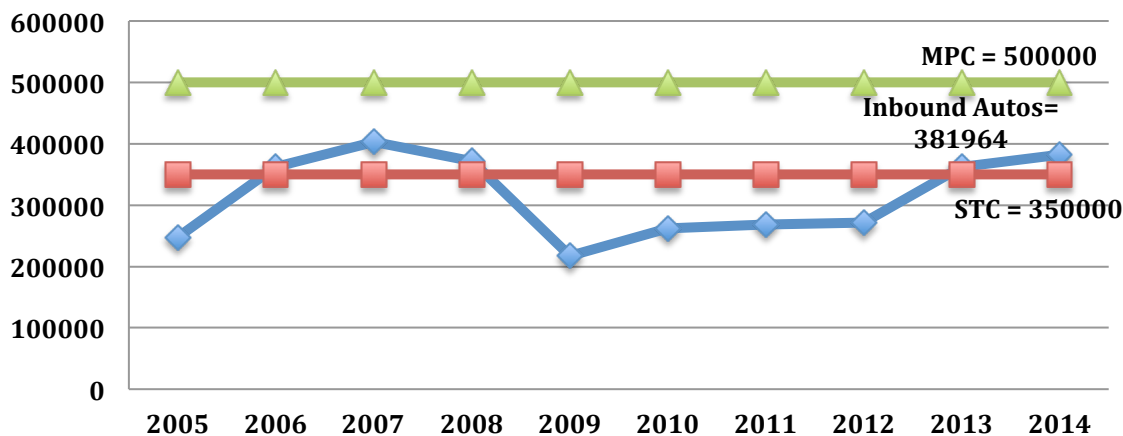
The historical trend for automobiles/vehicles by units is shown above. This trend showed that automobile throughput was on a decline from FY 2000 - 2001 to 2004 - 2005 with a marked recovery in FY 2005 - 2006.

Since the 2008 Business Plan, the automobile/vehicle throughput by units continued to grow, but then began a marked decline in FY 2007 - 2008 reaching a low in FY 2008 - 2009. Since the low in FY 2009, the automobile/vehicle throughput has once again rebounded. In FY 2012 - 2013, the vehicle throughput was 361,372 units.

During the 2006 and 2008 period, the terminal operator was operating above the Sustained Terminal Capacity (STC). If growth continued after 2007, NCMT would have reached its Maximum Practical Capacity by 2009 to 2010. The recession, slowing sales, and the pressure to handle new volume, the terminal operator was faced with larger inventories and longer dwell times.

With recovery occurring in 2012, NCMT once again is moving toward its STC and MPC. In 2013 and 2014, the terminal has exceeded the STC. A market driven need now exists for NCMT to increase its capabilities and capacity to meet future opportunities above the 350,000 unit STC

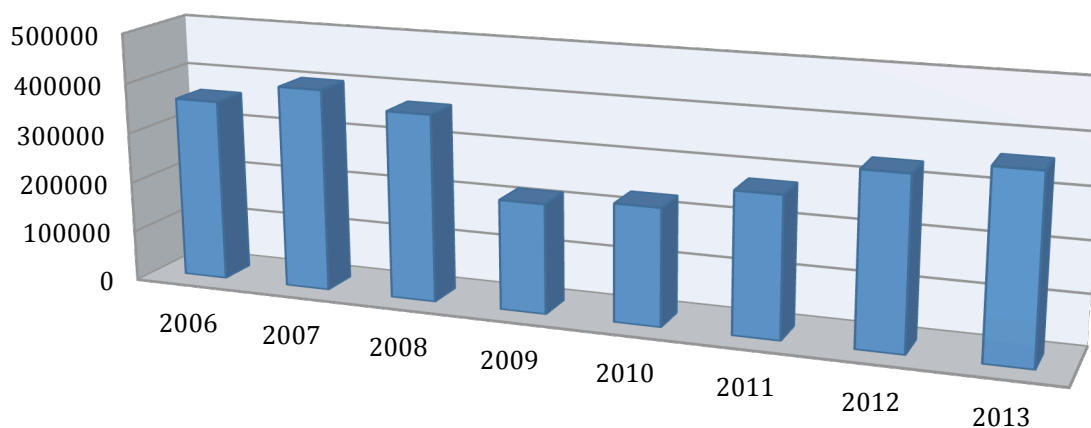
AUTOMOBILE THROUGHPUT BY UNITS INCOMING TO NCMT



The automobile industry is influenced by many market conditions. In an attempt to analyze the composition of the most recent NCMT business activities, the Optimization Study compares throughput in the 2006 Business Plan with the 2014 throughput. This analysis shows that while throughput continues to recover, the individual composition of the OEM's has changed.

In 2005 - 2006, American Honda was the primary inbound OEM with 66% of the volume or 200,000 units. Volkswagen was second with over 65,000 units coming by vessel and rail. By 2012 - 2013, the product mix changed. Honda declined to 20,000 units and Volkswagen increased to over 93,000 units. Two key new OEM's were Mazda at 104,450 units and Glovis (Hyundai / Kia) at 85,384 units. One of the ways that NCMT has been able to handle this rising volume has been ability to move most of the Mazda and Glovis units by rail. This intermodal shift permits the terminal operator to increase the velocity of the units through the terminal, reduce the dwell, and provide greater operational efficiency.

Vehicle Throughput By Units 2006 to 2013

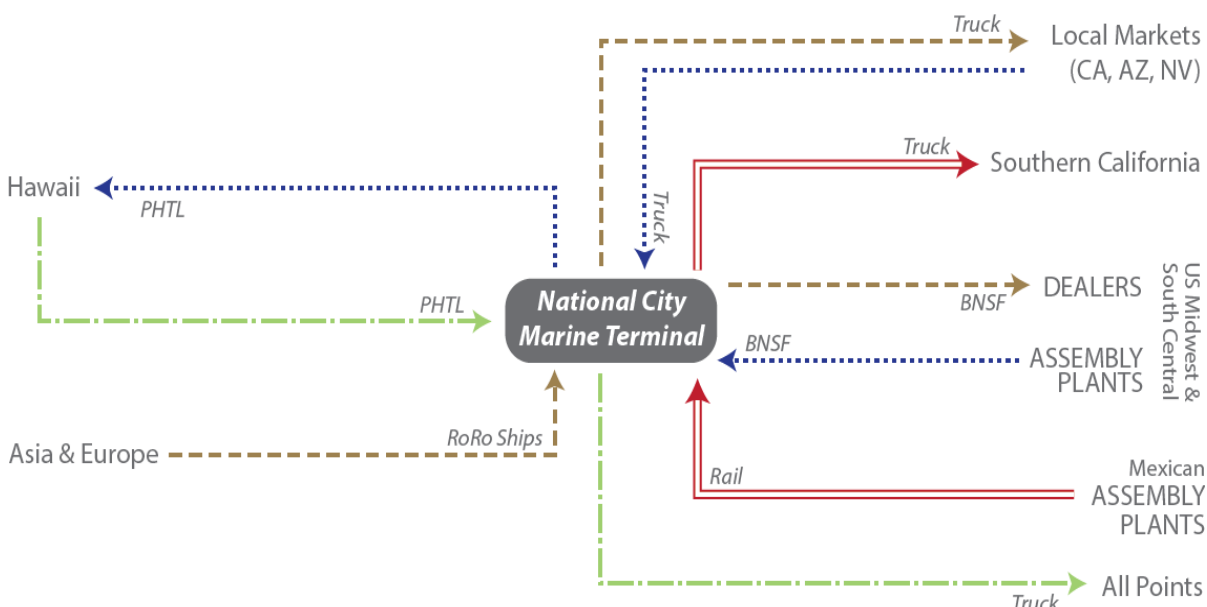


OEM	2005/2006 Business Plan	2014 Optimization Study
HONDA / ACURA	200,000	9,544
VW BY WATER	40,000	51,956
VW BY RAIL	25,000	40,960
PORSCHE	12,000	13,766
GENERAL MOTORS	50,000	10,644
BENTLEY	1,500	867
ISUZU	25,000	0
MAZDA	0	103,427
HYUNDAI / KIA	0	108,377
MITSUBISHI	0	130
LAMBORGINI	0	137
TOTAL	353,500	339,828 ¹³

¹³ Does not include all automobiles/vehicles handled.

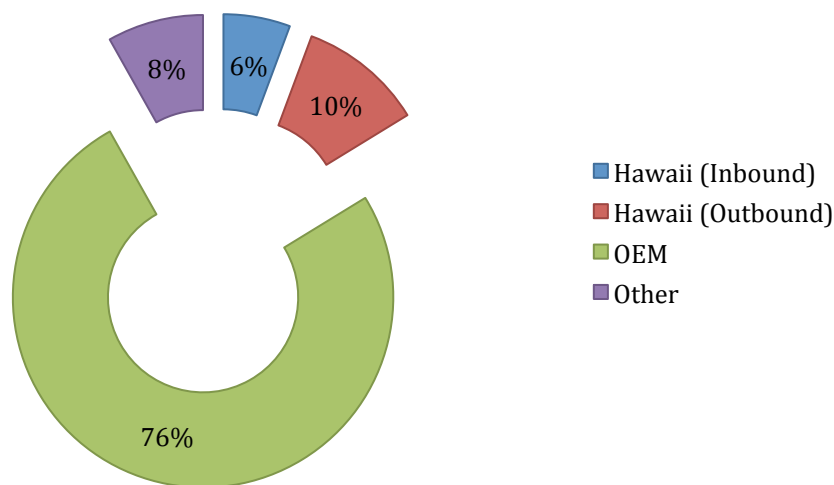
The importance of the changing composition of OEM's is that unlike a forecast that shows a solid trend line of growth, the actual experience of a Port and terminal operator is that the automobile/vehicle businesses grows by steps as new OEM's are added to the terminal. Therefore, the Optimization Study suggest that the terminal operator should have a capability to add at least 100,000 units over their current throughput in order to be in a position to attract a new customer. In general, using a factor of 5,000 units per acre/per year, the NCMT should have a 20-acre surge capability to market to new business opportunities.

In the Mercator Land Use Planning Study, February 2013, a schematic diagram of the traffic flows at NCMT was illustrated:



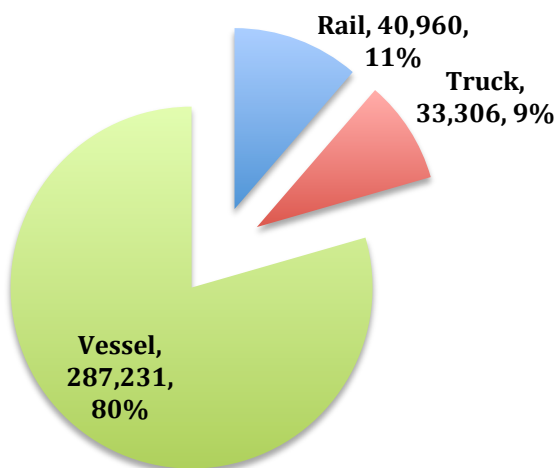
While this traffic flow places pressure on the Terminal Operator in responding to a wide variety of markets, it also provides an excellent opportunity for NCMT to serve a wide and diverse automobile industry.

In general 76% of the automobiles handled at NCMT are OEM-type of vehicles, 16% domestic trade to and from Hawaii and the remaining 6% are miscellaneous/other.



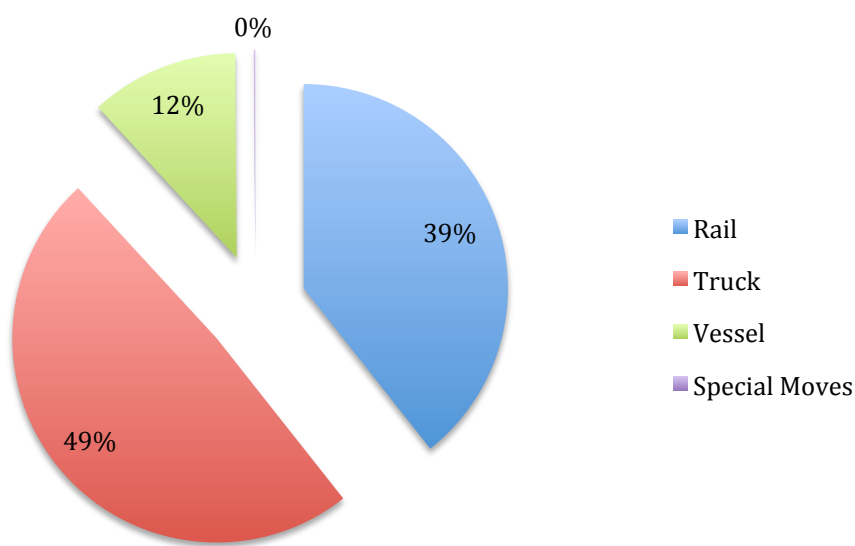
There are approximately 23 consignees that unload units at NCMT either by vessel, rail, or truck. The mode of transportation for these units can be broken down as follows¹⁴:

The inbound rail is Volkswagen product from Mexico. Volkswagen accounts for 84% of the 40,960 units.



The inbound units by truck are US manufactured product and consisted of 33,306 units. The top six consignees are: Chrysler, Ford, American Honda, Toyota (USA), Enterprise Car Rental, and the BMW Group. The top three of these are Chrysler, Ford, and American Honda, and they account for 77%. Finally, inbound vessel units were 287,231 units. GLOVIS and Mazda were the top two accounting for 71% of the total. The remaining top five include Volkswagen, Porsche, and American Honda.

Outbound from NCMT, consignees either load at NCMT onto another vessel (Domestic Hawaii or Export), rail, or truck from the terminal as follows:



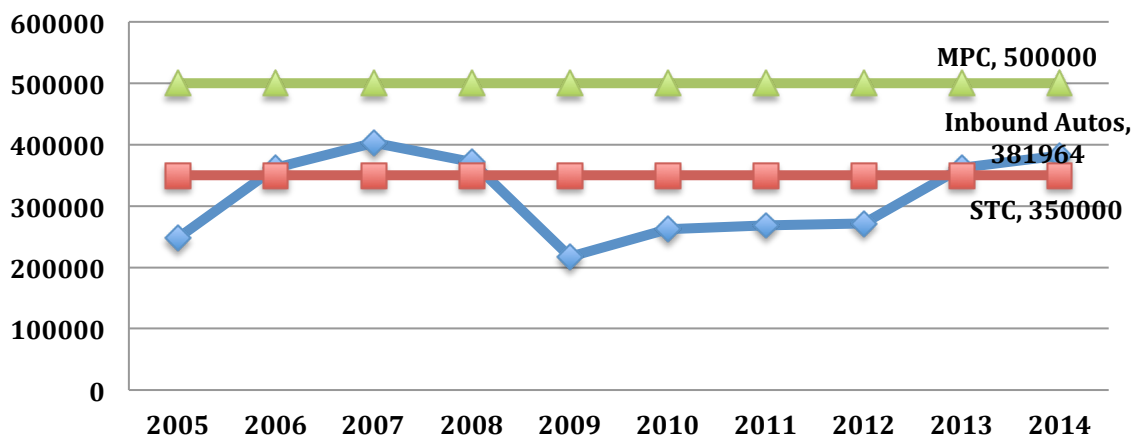
¹⁴ The total is 2014 Calendar Year units that comprise a portion of FY 2013/2014 and 2014/2015.

GLOVIS (Hyundai / Kia) and Mazda account for nearly 100% of the outbound rail moves from NCMT (149,373 Units). In some instances, the cars are processed at NCMT, but in most cases the automobiles are moved directly to a rail load line, loaded aboard auto racks, and transported out of San Diego by BNSF as a unit-train destined for Texas dealerships. GLOVIS and Mazda account for 211,955¹⁵ units imported to NCMT. Of that volume, 149,373 units leave NCMT by rail (70%).

The outbound truck movements consist of 185,282 units. Assuming ten vehicles per auto carrier that represents 18,528 annual loaded truck trips annually and 360 days of operation annually, the average daily truck trips with loaded vehicles are approximately 51 per day. The Top five OEMs that truck away from NCMT are: Mazda, Volkswagen, Volkswagen MX, Porsche, and Toyota. It should be noted that nearly all of the Mexican automobiles that arrive by rail leave by truck.

Finally, 44,595 units leave NCMT by vessel in either the domestic trade with Hawaii or as exports. The Top five consignees are: Ford, Chrysler, Honda, GLOVIS (Hyundai/Kia) and Toyota.

AUTOMOBILE THROUGHPUT BY VINS INCOMING TO NCMT



The Study's short-term forecast is that over 83,000 units will arrive at NCMT by rail or truck and 283,274 units arrived by vessel. The Study uses a higher CAGR for units arriving by rail and truck due to the anticipate growth in exports and Mexico imports by rail. To that extent, the Study suggests that the rail and truck volume will grow to 100,000 units by FY 2019 and nearly 200,000 units by 2035.

For all units by all modes, the NCMT Redevelopment Plan forecasts a low (1% CAGR), medium (2.5% CAGR), and high (4% CAGR) projection. The Plan uses the medium range for calculations of acres needed.

The NCMT Optimization Study does not specifically compare the automobile per acre operation's metric for PAS with other West Coast ports. As previously stated, this type of comparison may be misleading due to the different operating methods employed at

¹⁵ Calendar Year 2014 units.

the specific Ports. Also, it did not appear helpful to our analysis to introduce a new methodology and metric.

The NCMT Study uses FY 2013 as the base year and follows the Mercator October 24, 2014 methodology in estimated the number of acres. The Mercator methodology appears to be consistent with the December 2014 Notice of Preparation of a Draft Environmental Impact Report for the National City Marine Terminal Tank Farm Paving and Street Closures.

In evaluating the NCMT throughput, the terminal storage area is the most important factor in evaluating the terminal's throughput potential. The Optimization Study follows the following land-uses for the PAS operations:

Area	Acreage (Reductions)
Existing Pasha Terminal Operating Agreement (TOA) Area	115.7
Total of area not useable for storage (Mercator) The Tank Farm property is included.	43.04
Tidelands Use Occupancy Permits (TUOP) areas provided by SDUPD (includes Weyerhaeuser property current being considered)	48.27
Sub-Total Storage Areas usable for vehicle storage (115.7-43.04+48.27)	120.93
Temporary Use of Lumber FPR area	6.95
Temporary Use of Dixieline property (sublet)	4.70
Temporary Use of BNSF property (direct lease)	14.65
Sub-Total Storage Areas usable for vehicle storage	147.23
Tank Farm property improved and added as storage	5.71
Road Closures added as storage or existing truck away areas excluded added as storage	4.00
GRAND TOTAL	151.23

When you add back the operational areas essential for the operations of a terminal, the TOA has a total of approximately 188.56.

The Study previously suggested to maintain 20-acres of the above grand total for new opportunities. Based upon the NOP calculations this 20-acres would have a maximum storage capability of 3,080 units. With a 10.9 dwell, this area has the potential to serve a new 100,000-unit account.

Setting this surge area aside, the Grand Total for existing business at the NCMT facility would allocate 131.23 acres for existing accounts.

Using the maximum 154 vehicles per acre per year, the maximum static capacity is 20,209 units. With the current 10.9 Dwell time, this storage area is capable of supporting over 675,000 units. This achieves the short and medium term optimization study forecast.

The Optimization Study calculated two operational changes: reduce dwell time from 10.9 days and increase vehicle storage to 175 vehicles per acre. The Study does not suggest that either of these changes can be easily achieved or are within the control of the Port or Terminal Operator, but as an optimization metric the District should set reach goals to achieve maximum utilization of its properties. The “doing more with less” philosophy along with “velocity” should be the key themes for the optimized terminal.

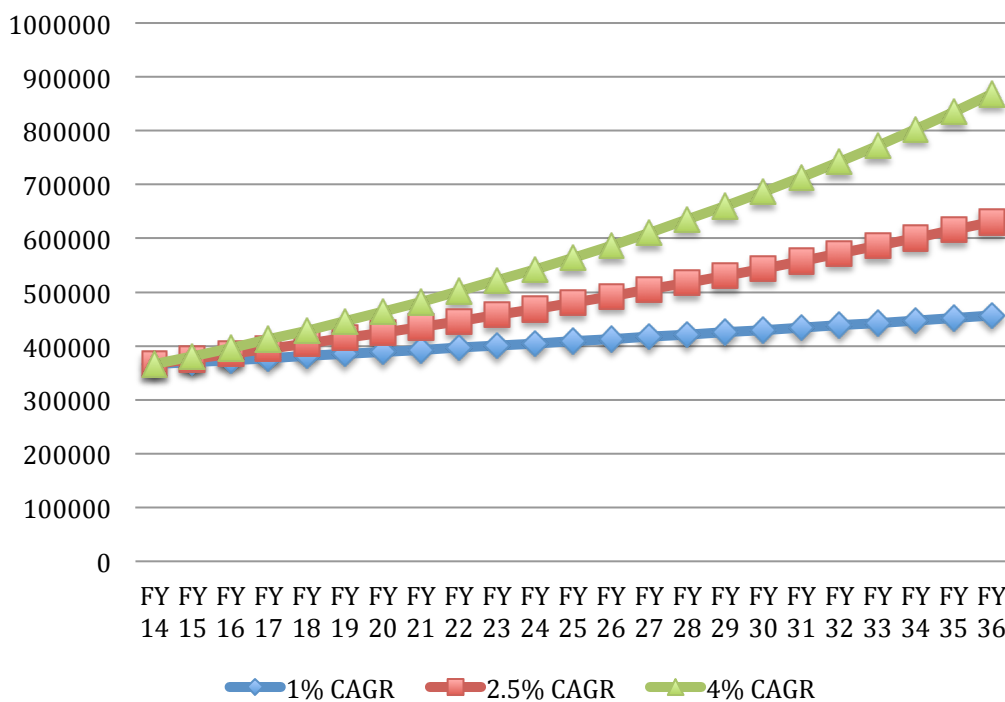
By reducing the dwell time on average by three-days, the terminal's capacity increases by over 300,000 units per year (nearly 1 million unit per year). By increasing the vehicles stored per acre and maintaining the same 10.9 dwell, the static storage is increased to 22,965 units and the throughput increases by over 100,000 units. Therefore, for the terminal to achieve the 800,000 unit capacity, without making major capital investments, the terminal operator needs to implement a combination of business factors that reduces dwell and increases storage per acre.

Following the principle that forecast less capacity equals need the Study suggests that storage capacity supports the findings that the Terminal can expect between 600,000 units to 800,000 units in vehicle/automobile throughput. However, it must be noted that due to the irregular vessel calls and the requirements of the OEM for storage, processing, and/or automobile campaigns, it is not unusual for an automobile terminal operator to need property outside of the main terminal. Having the 20-acre new business surge property does provide some overflow capability.

Today Global Auto Processor Services (GAPS) at the Port of Hueneme has units stored in many different vacant parcels throughout the general area (e.g. vacant airport property in Oxnard and Camarillo). At the Port of Tacoma, it was a daily task of the Director of Automobile Business to evaluate the FPR requirements and to make appropriate assignments of property outside of the main Marshall Avenue Automobile Terminal operated by AWC.

The Study recommends that the Port and the terminal operator have a flexible process to assess operating factors; there is no guaranteed formula or metric that can take into every operational factor that the automobile processor and operator will face. The Optimization Study does provide a good metric to be used in future evaluations regarding terminal capacity require

NCMT Automobile Forecast (2013 Base Year)



Coastwise Domestic Trade - Hawaii

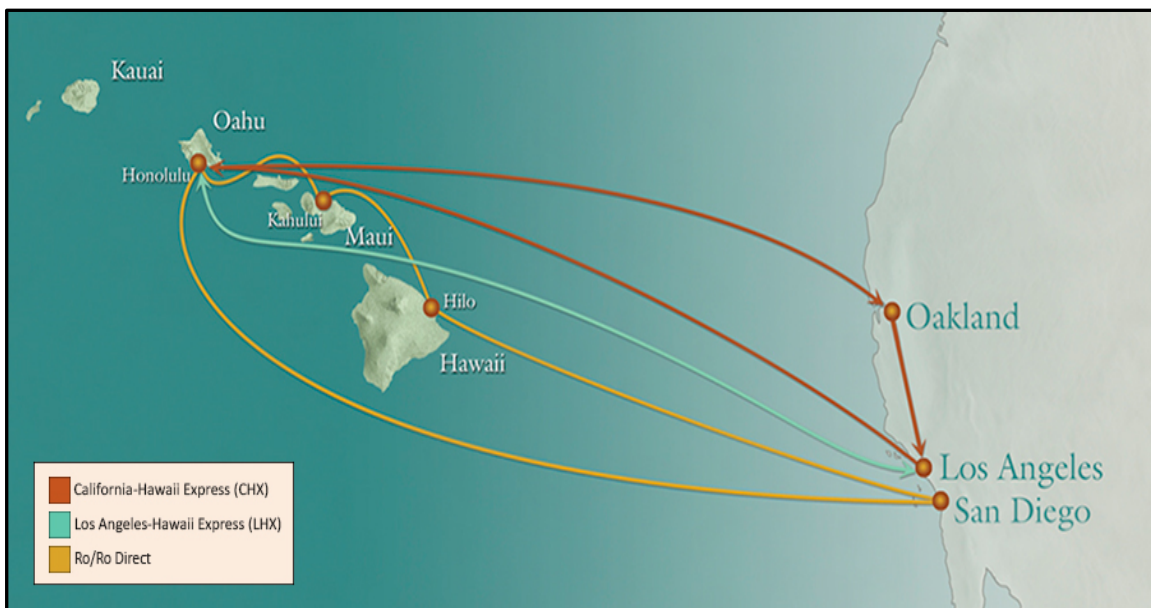
Nearly ten years ago, the Pasha Group entered the coastwise trade between Mainline US and Hawaii. The Pasha Hawaii service includes vessels, a network of terminals, and supply chain services to the shipping public. The service delivers containers, cars, trucks, boats, and other oversized cargo to destinations in the Hawaii Islands. Until recently, the service was a roll-on/roll-off service that included fully enclosed and ventilated movable decks to offer the widest range of cargo service.

Today with the addition of a new vessel Marjorie C and the acquisition of the Horizon Lines, the Pasha Hawaii service has broadened its scope of ocean transportation services with fixed-day sailings for containers, rolling stock and out-of-gauge cargoes. This new service operates five vessels with an exclusive terminal facility on Honolulu's Sand Island.

In addition to the original bi-weekly (fortnightly) service from San Diego, the Pasha Hawaii services offers two delivery schedules and services for its customers:

- California Hawaii Express has two California port of calls each week. It has a vessel call departing Oakland on Wednesday and Los Angeles on Saturday.
- Los Angeles Hawaii Express is the newest service that has direct midweek sailings from Los Angeles every Wednesday. This Express service provides the fastest transits utilizing the newest vessel the Marjorie C.

The Optimization Study focus is the bi-weekly (fortnightly) service from NCMT. The Study did not analyze cargo throughput for a weekly service. However, it is clear that if a second vessel is added, this added vessel capacity and reduced dwell increases the throughput capabilities of NCMT.



Horizon Lines Coastwise Trade Lanes

Pasha Hawaii San Diego to Hawaii Service

The Coastwise trade to and from Hawaii includes the following cargo types reported in the SDUPD Berth Utilization Report:

- **Inbound Commodities from Hawaii**
 - Vehicles (POV's, Fleet, and OEM's)
 - Commercial Vehicles
 - Machinery
 - Van Pac's
 - Empty Trailers
 - Loaded TEUs and FEUs
- **Outbound Commodities to Hawaii**
 - Vehicles (POV's and Fleet)
 - Commercial Vehicles
 - Machinery
 - Enclosed Trailers (48 ft)
 - Van Pac's
 - Recreational Trailers
 - Empty Trailers
 - Boats
 - Metals
 - Loaded TEUs and FEUs

The Pasha Hawaii Transport Line (PHTL) currently employs one vessel on a bi-weekly (fortnightly) schedule to Hawaii from San Diego. The Berth Utilization Report identifies Berth 24-2 as the dedicated berth for the Hawaii Service.¹⁶ The M/V Jean Anne was put in service in 2005. It is a fully enclosed roll-on/roll-off ship (PCTC) to service Hawaii from San Diego. The vessel capabilities meet the demand for automotive customers to transport cargo into the Hawaii market.

The M/V Jean Anne particulars are:

- Age of vessel is 10 years
- The LOA is 579 feet
- The Beam is 102 feet
- The Draft is 28 feet
- There are ten fully enclosed ventilated decks. Three are designed to carry heavy and oversized construction equipment, agricultural, and military equipment.
- The vessel has a 3,000 automobile capacity.
- The vessel is designed to carry a wide variety of cargoes, wheeled or static, driven onboard or loaded with vessel trailers and forklifts.
- The vessel has 125,000 square feet of cargo space for containers and other heavy static pieces of cargo.

A second vessel that was identified during the Study that could have been added to the Hawaii service was the M/V Marjorie C. This vessel is a combination container/roll-on/roll-off (“ConRo”) vessel. This vessel provides similar Ro/Ro capabilities, but to diversify the service the Marjorie C offers expanded container capabilities.

With the two vessels in operations, Customers would have a more frequent service, and the cargo dwell time would be greatly reduced. The chief constraints, however, on establishing a weekly service in San Diego were:

- **Origin of the coastwise traffic.** For automobile cargo, it is obvious that the synergetic connection between the Pasha Automobile Services and the Pasha Hawaii Services establishes a direct benefit for automobile shipments to Hawaii. Other general cargo destinations may make other Southern California ports of call more advantageous in the future.
- **Container Infrastructure.** As noted in previous reports, the lack of container infrastructure in San Diego (e.g. on-terminal equipment, chassis pools, and containers) makes the Ports of LA and LB better suited for an express service between Mainland US and Hawaii.
- **Horizon Lines Current Book of Business.** Since the Pasha Hawaii intends to build on the current book of business of Horizon Lines, maintaining existing terminal and cargo support arrangements provide the Customers with the best services and the least cost.

¹⁶ It should be noted that the M/V Jean Anne may also utilize the western berths at NCMT.

Horizon Line Container Vessel



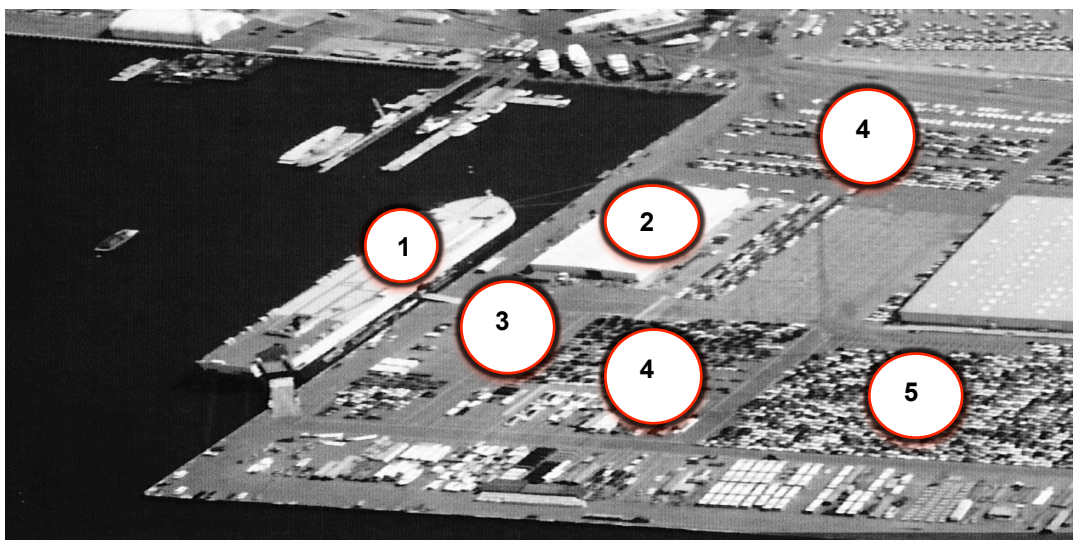
The M/V Marjorie C particulars are:

- Age of vessel is less than one year.
- The vessel LOA is 692 feet.
- The beam is 106 feet.
- The draft is 31 feet.
- The vessel has a quarter stern opening.
- The vessel has ship's gear (cranes) capable of lifting 40 metric tons.
- There is a 1,400 TEU container capacity.
- The vessel has 104,000 square feet of cargo space for oversized cargo.
- The vessel has a 1,100 automobile capacity

Pasha Hawaii Marjorie C



The NCMT Redevelopment Plan allocates approximately 24 to 27 acres¹⁷ of the NCMT to the Pasha Hawaii service. This suggested area consists of the following:



1. Berths 24-1 and 24-2 (1,400 linear feet along with a 50 foot apron or 70,000 square feet)
2. Transit Shed (40,491 square feet)
3. Open Storage (185,093 square feet or 4.25 acres)
4. Open Storage (exclusive 700,000 square feet or 16 acres)
5. Open Storage (non-exclusive 175,000 square feet or 4 acres)

All of the areas described above are in the existing Pasha Terminal Operating Agreement (TOA). The suggested identified uses are for planning purposes only. There are many operational factors used in determining where cargo can be placed on a terminal for the most efficient loading and unloading. The area's use shown above appear to be consistent with past uses by the Pasha Hawaii trade and the Mercator Report. The terminal operator is the appropriate party to allocate and designate terminal space for the staging, loading, and unloading of cargo.

This fix-day liner service requires that prior to arrival of the vessel cargo must be staged on the terminal; but space is also needed to unload the vessel. Once the eastbound cargo is unloaded, the westbound freight (to Hawaii) is loaded and the eastbound freight is trucked to final destinations. The space demands for the eastbound freight is determined by the volume of freight to be discharged. The westbound freight is staged and moved to the vessel in accordance with the vessel's loading plan. The Study's assumptions are that westbound freight to Hawaii is 100% of the vessel's capacity and the eastbound freight returned from Hawaii is 60% of the vessel's capacity.

The NCMT Optimization Study suggests that “vessel capacity” and “frequency of service” are the limiting terminal capacity factors. While the M/V Jean Anne has an automobile capacity of 3,000 units, with the general cargo nature of this domestic trade,

¹⁷ This is approximately 3-acres more than Mercator.

the decks are reconfigured to accommodate a wide-variety of cargo. This in turn limits the automobile capacity of the vessel.

The Study relied on the Berth Utilization Report to analyze the nature and amount of cargo eastbound from Hawaii and westbound to Hawaii.

Cargo Type Eastbound	Average 2013	Largest 2013
Automobiles (Units)	820 units	1667 units
Commercial Vehicles	6 units	21 units
Enclosed 48' Trailers	1 unit	0 units
Recreational Trailers	10 units	10 units
Empty Trailers	11 units	9 units
Loaded Container (FEUs)	3 FEU	5 FEU
Boats	2 units	3 units
General Cargo (Machinery, Metals, Van Pac, NOS, and Metals) based upon size rather than weight.***	3,619 CBM	3,254 CBM

*** The Study utilizes the cubic meter (CBM) or size of the cargo rather than the weight based.

Cargo Type Westbound	Average 2013	Largest 2013
Automobiles (VINs)	1529 units	1881 units
Commercial Vehicles	25 units	25 units
Enclosed 48' Trailers	2 unit	4 units
Recreational Trailers	28 units	1 units
Empty Trailers	6 units	3 units
Loaded Container (FEU)	25 FEU	20 FEU
Loaded Container (TEU)	1 TEU	2 TEU
Boats	4 units	1 units
General Cargo (Machinery, Metals, Van Pac, NOS, Lumber and Metals) based upon size rather than weight***	8,282 CBM	5,540 CBM

Using the Jean Anne's capacity, for purposes of the Study, a typical eastbound and westbound freight sustainability cargo volume was estimated. The Table below depicts this base case using the number of units¹⁸:

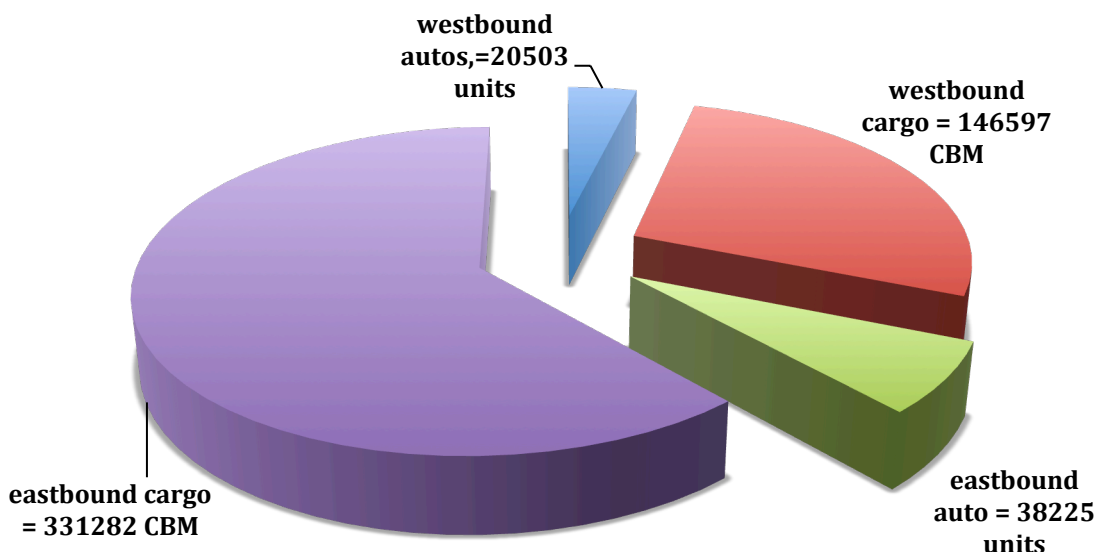
Cargo Type	Base Case Inbound and Outbound from NCMT
Automobiles (VINs)	2250 units
Commercial Vehicles	31 units
Enclosed 48' Trailers	3 unit
Recreational Trailers	38 units
Empty Trailers	17 units
Loaded Container (FEU)	28 FEU
Loaded Container (TEU)	1 TEU
Boats	6 units
Other General Cargo	800 units
TOTAL UNITS (Eastbound and Westbound) COMBINED	3,174 UNITS

The current bi-weekly vessel call arrives either Tuesday or Wednesday and departs the next day. Along with commercial cargo, military cargo (such as helicopters) may also be associated with the vessel call. Military cargo is unique cargo and requires paved open space. In some cases, like helicopters the cargo will be unwrapped and will take off from the terminal.

The outbound automobiles associated with the Hawaii trade can be "blocked stowed" getting better utilization of the terminal and requiring less land. For instance, when the Jean Anne called at TAMT on a trial basis, in the open space between Warehouses B & C and the Transit Sheds, PAS nearly 2,000 units. The inbound automobiles, however, are "two blocked" and reduce the capabilities by one-third. The total spaces identified in the TAMT terminal layout plan for PAS was 3,160 units.

The chart below shows the 2012/2013 NCMT throughput for the PHTL service the cargo is shown in cubic meters and the automobiles are units.

¹⁸ Units were determined by using the SDUPD Berth Utilization Report.



With regard to container traffic at NCMT for Hawaii, the MV Jean Anne handled the following volume in 2012 – 2013:

FY 12-13	Inbound TEU	Outbound TEU
Full TEU	129	1130
Empty TEU	0	46
Total TEU	129	1176
Average TEU per call (26 calls)	5	45

Based upon a sample of inbound and outbound cargo per TEU, the average metric ton's per container is 9 m/t's. With 50 TEU's inbound and outbound, the container throughput on the MV Jean Anne is estimated at 450 metric tons annually.

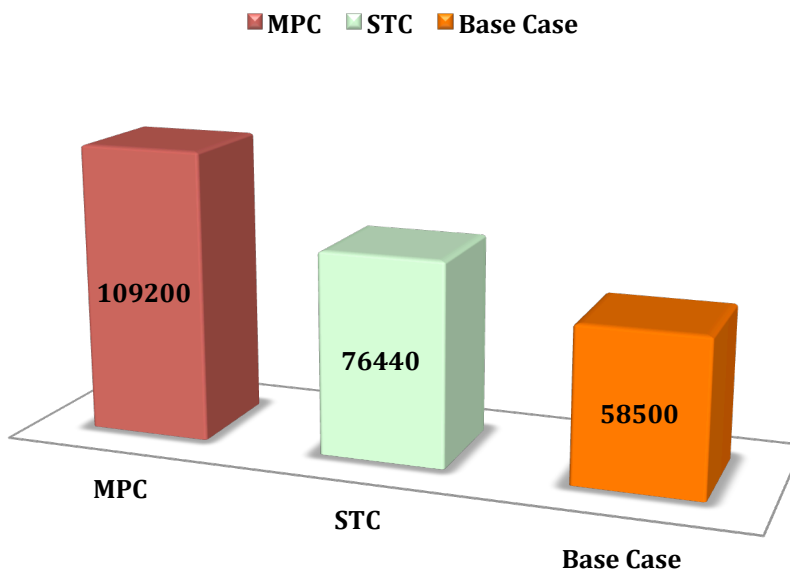
The total annual cargo units provided for the based year were 82,524 units (automobiles, general cargo, and containers). The Automobiles total was 58,500 or 71% of the total units of cargo to and from Hawaii. All other cargo was 477,879 cubic meters. The metric ton cargo is approximately 170,000 metric tons.¹⁹

¹⁹ Cubic meters are used in the Study since it is the basis of revenues received by the Port (e.g. wharfage is the higher of the weight or cubic meter as manifested).

While past studies blended all automobile units together, the Optimization Study prefers to look at the trade separately. For the domestic automobile capabilities of the NCMT Terminal, while the vessel estimates (MV Jean Anne) can be as high as 6,000 automobiles (3,000 In & 3,000 Out), only 70% is generally available for the automobile freight with the remaining space used for other general cargo.

Therefore, the Study estimates the Maximum Practical Capacity (MPC) for the domestic automobile trade is 4,200 total automobiles on a fortnightly schedule or 109,000 per annum. However, the more reasonable Sustainable Terminal Capacity (STC) is 70% of the MPC or 2,940 total automobiles or 76,440 automobiles per annum. The base year (2013) the automobiles handled was approximately 58,500 units. Therefore, the service is currently operating under the STC.

Domestic Automobiles To and From Hawaii

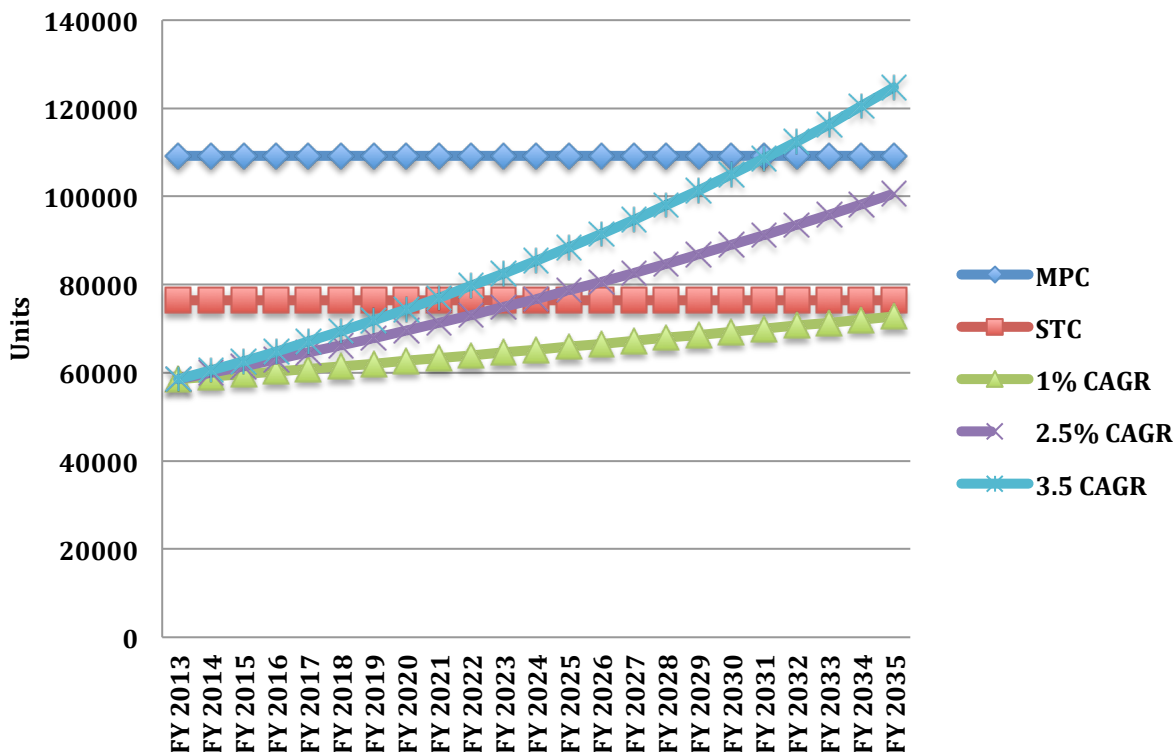


The NCMT Optimization Study applied three CAGR to the base case, they were Low (1%) , Medium (2.5%) and High (3.5%). The CAGR for the domestic trade is a combination of the GDP Forecast prepared for Study plus a review of the Hawaii GDP as published by the State of Hawaii. Assuming the MPC and STC remain constant and that the fortnightly service remains consistent with the Plan, the Study shows that the domestic automobile trade will grow through 2035. At the low CAGR, the terminal does not reach the STC; at the medium CAGR, the terminal reaches the STC at the medium-planning horizon (2025) but does not exceed the MPC. This is the most likely forecast.

The planning implication of this capacity analysis is that the SDUPD should be evaluating how the terminal's cargo throughput can be modified to increase the MPC 2025 and beyond along with added vessel capacity.

At the highest CAGR, the terminal reaches the STC within the short term (next five years) and exceeds the MPC by 2030. Under the highest scenario, the SDUPD should immediately begin plans with the terminal operator to increase capacity provided additional vessel capacity is also planned.

Automobile Forecast Domestic To & From Hawaii



Since the Study suggests that the domestic automobile trade can be accommodated in the 27-acre domestic PHTL area, it is important to note that when estimating the required vehicle storage acres for the OEM on the Main Terminal, the domestic throughput should not be included in the throughput analysis.

While Pasha and Mercator suggests a maximum storage capacity of 154 units per acre. The NCMT Optimization Study concludes that due to the nature of the Hawaii trade, vehicles are block stowed. Therefore, the inbound and outbound auto can achieve a higher density per acre (e.g. at 175 to 200 units per acre).

Conversely, due to the fortnightly service, if the automobile capacity for the vessel is reached or the cargo mix limits the number of automobiles prior to all automobiles being loaded, the dwell time for remaining vehicles is a minimum of an additional 14 days

Due the complex nature and variety of the general cargo, it is extremely difficult to forecast and calculate requirements for the general cargo associated with this domestic trade. The general cargo will require a combination of open landcet for high and heavy

pieces of machinery that will be staged and driven onto the vessel. Certain cargo will require covered space for storage or for loading the pieces on trailers to be driven aboard. The containers will also require open land, preferably close to the vessel, so that the unloading and loading process will cycle without interference to the other cargo. The automobiles will be received, stored, and driven aboard. There needs to be an open area to unload the eastbound loads (from Hawaii), and another staging area for the westbound loads (to Hawaii).

The Optimization Study estimates that the maximum space allocation on the M/V Jean Anne is 402,763 Cubic Meters. Since the Study establishes the vessel as the general cargo and automobile constraint, this maximum space allocation became the 2036 limitation (It assumes no additional vessel and continues the fortnightly service).

The base year general cargo throughput for 2013 was calculated at 297,000 cubic meters. The study uses three CAGR's (1%, 2.5% and 3.5%), and it achieved the following results.

At the 1% CAGR, the general cargo can grow and not reach the theoretical maximum load through FY 2035; at 2.5%, it is estimated that the theoretical maximum will be achieved at FY 2025 (end of the medium planning term), and at 3.5% the theoretical maximum will be achieved by FY 21. The cubic meter throughput is cargo categories, but it does not include automobiles/vehicles.

The Pasha Group is one of the nation's leading Jones Act shipping and logistics companies that has served the US Mainland to Hawaii trade lane since 2005. Pasha Hawaii Transport Line (PHTL) provides specialized vehicle, container and oversize cargo transport service from National City Marine Terminal.

In May of 2015, the Pasha Hawaii Transport Line placed the Marjorie C into service; at that time, Mr. George Pasha IV stated:

"After more than three and a half years of planning and construction, we are pleased to unveil a ship that has been designed to not only accommodate the varying needs of our customers, but a vessel that minimizes our carbon footprint through extensive fuel consumption efficiencies and other green technologies."

He went on to say: "With the addition of Marjorie C, we can now offer customers increased service and capacity between the West Coast and Hawaii trade lane on vessels providing superior reliability and cargo protection."

Coastwise Domestic Trade – Lumber

In the 2008 Business Plan, the two primary maritime cargo-handling operations at NCMT were automobiles and lumber. The cargo storage capacity established for lumber operations is summarized in the table below. At that time, there were two customers (Dixieline and Weyerhaeuser) that had open and warehouse operations; combined these customers had 30 acres of open storage and 37,500 square feet of warehouse space, and the static capacity was in excess of 30 Million Board Feet (MBF) of lumber, the daily dwell ranged from 17 to 30 days, and the estimated annual capacity was in excess of

375 MBF. The base cargo throughput for 2005 - 2006 was 146.25 MBF (approximately 165,000 m/t's).

Open Storage	Dixieline	Lumber	24 ac	25.0 MBF 28,295 mt ⁽⁴⁾	30	300 MBF 339,000 mt	85.712 MBF 97,008 mt ⁽⁵⁾
Lumber W/hse		Dry Storage	30,000 sf	0.60 MBF 680 mt	21	8.0 MBF 9,000 mt	
Open Storage	Weyerhaeuser	Lumber	6 ac	5.0 MBF 5,659 mt	17	75.0 MBF 84,885 mt	60.534 MBF 68,513 mt
Lumber W/hse		Plywood, Dry Goods	7,500 sf	0.15 MBF 170 mt	21	2.2 MBF 2,490 mt	

The 2008 Business Plan forecast indicated that both Dixieline and Weyerhaeuser had growth opportunities. The Plan forecast is as follows:

Lumber	Low MT's	Med MT's	High MT's
2015	191245	250375	250375
2020	200999	290259	290259
2025	211249	336498	336498

Using the San Diego Tariff conversion of metric tons to MBF, the high forecast for 2025 was 221.37 MBF of lumber from the Pacific Northwest. This growth forecast was not achieved.

Weyerhaeuser changed its coastwise port of call at the end of 2013. Dixieline's last barge call at NCMT was September 2012. Between September 2012 and the end of Weyerhaeuser's 2013 operation, Dixieline continued to receive a portion of the barge directly from Weyerhaeuser. Dixieline has historically relied on Weyerhaeuser to provide transportatyon services. Currently, the Dixieline coastwise waterborne cargo is unloaded at the Weyerhaeuser facility in the Port of Long Beach. This cargo is then trucked to the National City facility.

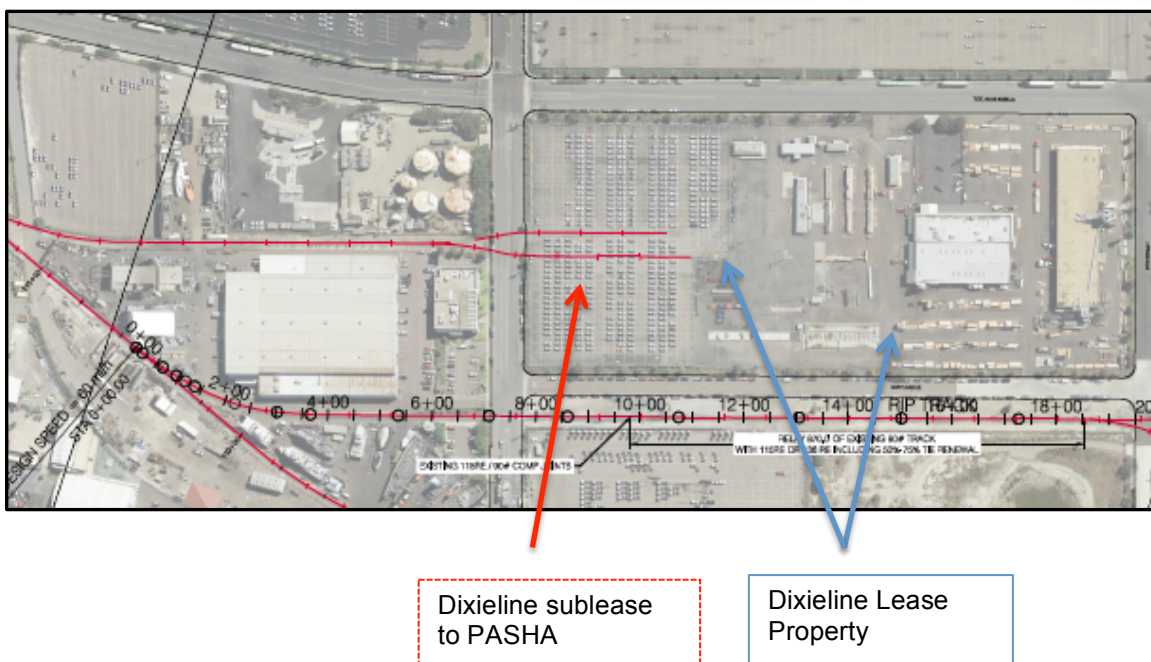
In 2008, the Dixieline handled nearly 200 -240 MBF per year (236,000 m/t's) at their facility. Of that total forty (40%) percent was handled by barge (80 to 95 MBF), forty (40%) percent was transported by rail, and the remaining twenty (20%) percent arrived by truck. The NCMT Optimization Study assumption is that 40% of the Dixieline product continues to arrive by rail and 60% arrives by truck.

For Dixieline to continue a San Diego port of call independent of Weyerhaeuser, the coastwise barge service would have to add NCMT to their schedule. In this latter situation, Dixieline would end up paying a premium for this added port-of-call. The added cost for the additional port of call compared to trucking makes the trucking of lumber from Long Beach ~ "lowest cost and best service".

Dixieline desires to resume direct water service for a portion of the cargo destined for the NCMT. It is unclear when and who would provide this service. The two factors directly affecting this resumption are 1) the cost associated with rail versus barge transport from the PNW and 2) the cost associated with unloading the lumber at the Port of Long Beach versus the cost of unloading at the Port of San Diego. The Optimization Study recommends that the SDUPD work with Dixieline to assist them identify potential coastwise service providers for this cargo.

Since the Weyerhaeuser lease has ended, the Optimization Study recommends that the former Weyerhaeuser property be incorporated into the Pasha Automobile Services Terminal Operating Agreement. In 2013, the SDUPD entered into a Tidelands Use Occupancy Permit for this property with Pasha. The former Weyerhaeuser area adds six (6) acres of open land and provides for a small warehouse operation.

The Amended and Restated Lease between Dixieline Lumber Company (Pro Building Company), is dated 8 November 2011. Dixieline has been a tenant of the SDUPD since 1994. The Dixieline parcel is approximately 12.41 acres of tidelands area. The lease term, plus all options, extends until December 31, 2023. Although Dixieline does not discharge coastwise lumber by barge, the lease agreement provides for a minimum annual throughput to the end of the lease.

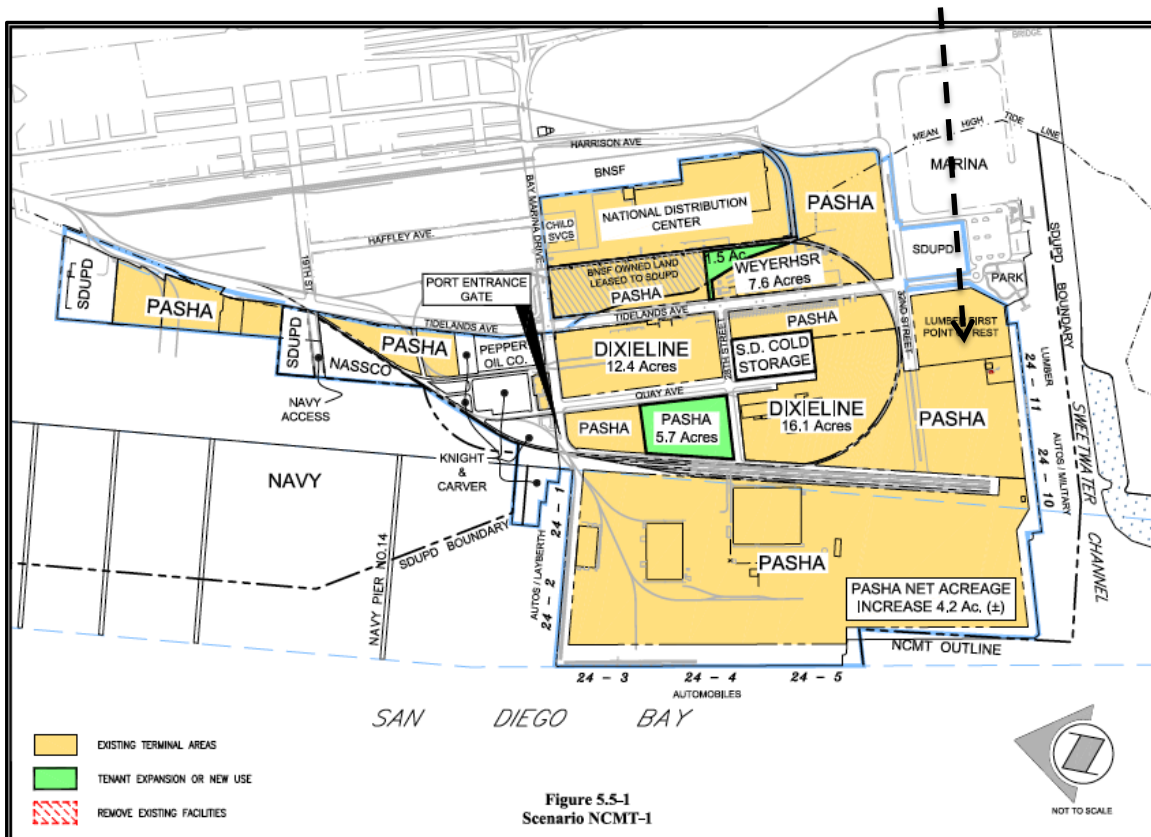


Currently, Dixieline sublets approximately 4.7 of its 12.4 acres to Pasha for the storage of automobiles. This leaves them approximately 7.7 acres for their lumber operation. As noted earlier, approximately 40% of their lumber may arrive by rail. Dixieline has two rail unloading opportunities. There is a railroad switch and direct crossing of Bay Marina Drive located between Pepper Oil and the Pasha Office Building. This crossing provides two parallel unloading tracks.

However, since Pasha has use of this area, Dixieline uses the rail track located on Quay Avenue for delivery of their rail cars. The Study recommends that both the direct and

Quay Avenue rail options be maintained and preserved in order to serve the Dixieline operations.

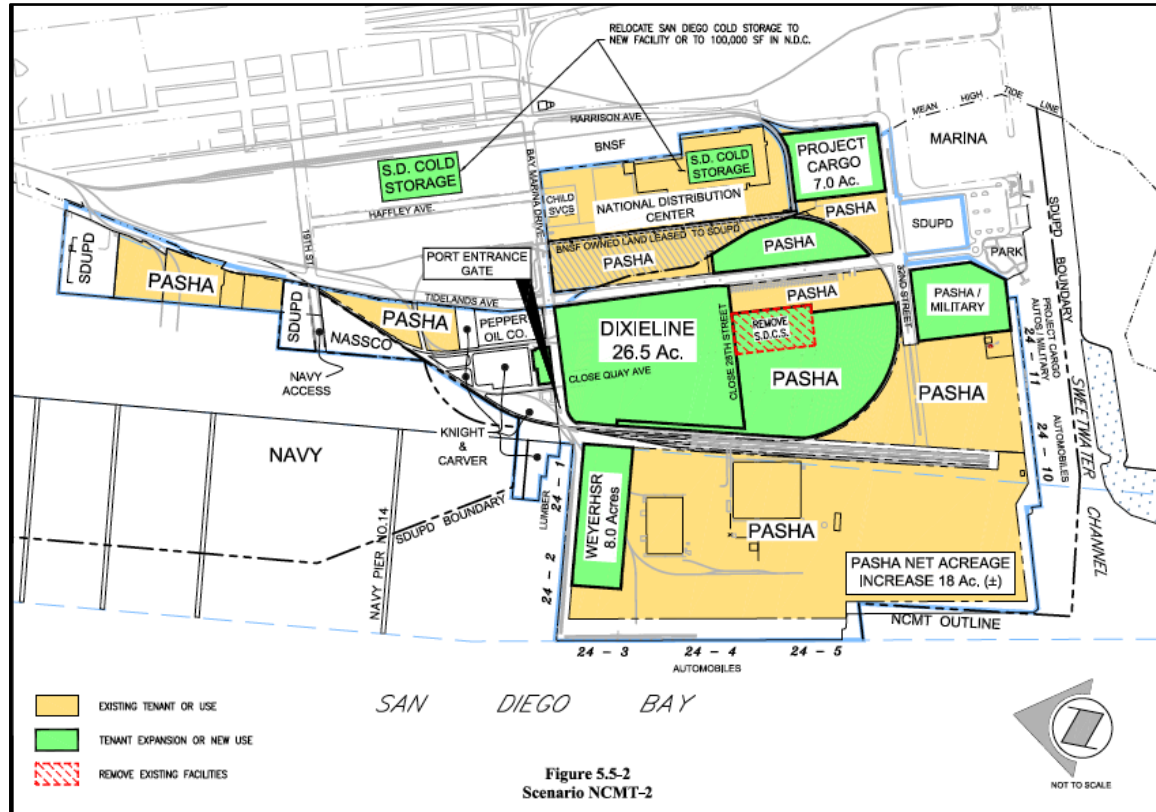
Lumber First Point of Rest (FPR) Area Business Plan 2008 Development Scenario # 1



The 2008 Business Plans development scenario (above) makes little change to NCMT. One recommendation, however that was adopted was the establishment outside of the PAS Terminal Operating Agreement of a seven-acre lumber first point of rest and project cargo area. Since there is no longer coastwise barge service and project cargo is generally handled at TAMT, this area should be used by Pasha for temporary storage of automobiles.

When there is a barge service, berth 24-11 will be used, and the lumber will be placed on the ground in the FPR area, and then moved to the Dixieline leased premises. The Optimization Study suggests that while the SDUPD continues to seek re-establishment of coastwise barge service that this seven-acre parcel remain as a non-exclusive use for lumber and storage of automobiles.

2008 Business Plan Long Term Development Scenario # 2



A second long term development scenario shown in the 2008 Business Plan expanded the Dixieline lease premises to 26.5 acres and moved the Weyerhaeuser lease premises to Berths 24-1 and 24-2. The Optimization Study dismissed this development scenario since the current coastwise domestic trade to Hawaii utilizes this area of NCMT.

Based upon an initial discussion with Dixieline and based on their desire to resume coastwise water service, lumber is included in the Study's cargo forecast. The planning forecast for Dixieline in the NCMT Optimization Study assumes that water service to NCMT will re-occur with a minimum of 6 barge calls 36 MBF per annum and it may grow to 12 barge calls per year (6 MBF per call) or a total of 72 MBF per annum. The lumber forecast assumes a 3.5% CAGR.

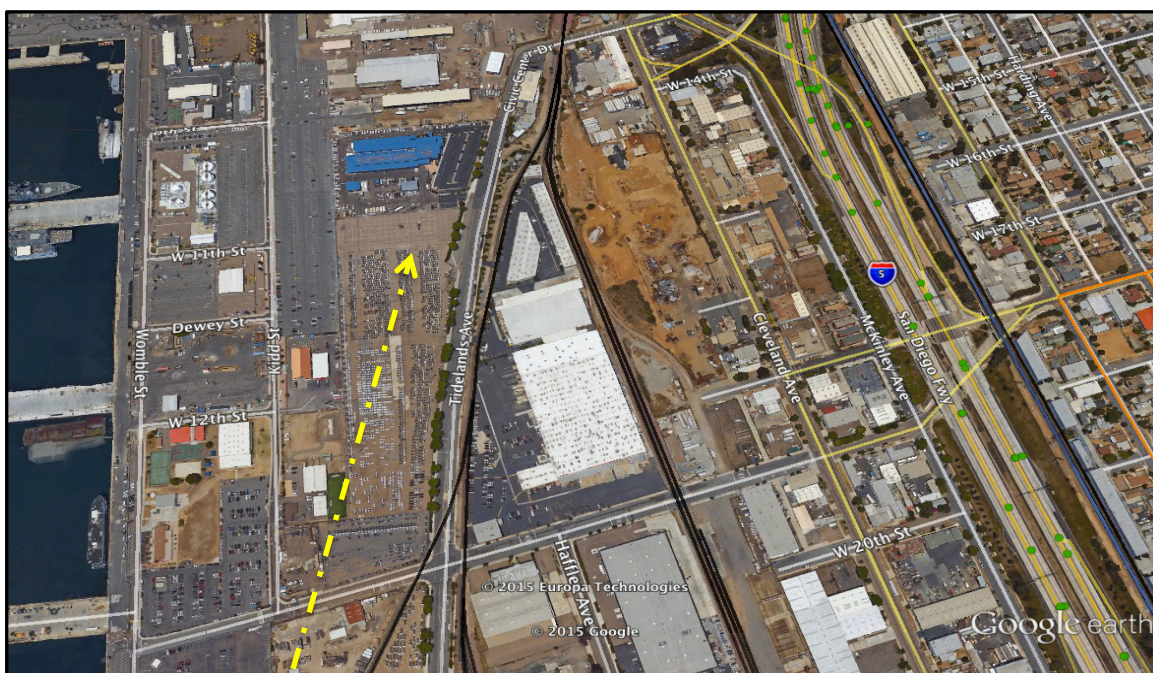
The updated NCMT forecast in metric tons based upon the aforementioned assumptions has coastwise waterborne lumber growing from 97,773 m/t's in 2017 to 127,532 m/t's by 2030. This remains below the 2008 forecast and the maximum practical capacity (MPC) and sustained terminal capacity for lumber calculated in the 2008 Business Plan for NCMT.

Findings and Recommendations

Since the Dixieline property is within the District's tideland trust zone, it is important to encourage and support them to resume coastwise barge service from the Pacific Northwest. One of the important short and medium term options identified for Optimization of the NCMT for marine terminal uses is to "relocate non-PAS tenants to

realign terminal acreage”. The two key non-PAS tenants remaining that are not currently water dependent are Dixieline and PLA-ART cold storage. The 2008 Business Plan suggested that PLA-ART be relocated to two industrial sites. The Optimization Study agrees with the 2008 Plan recommendation. If Dixieline cannot resume waterborne cargo services then they also should be considered for relocation.

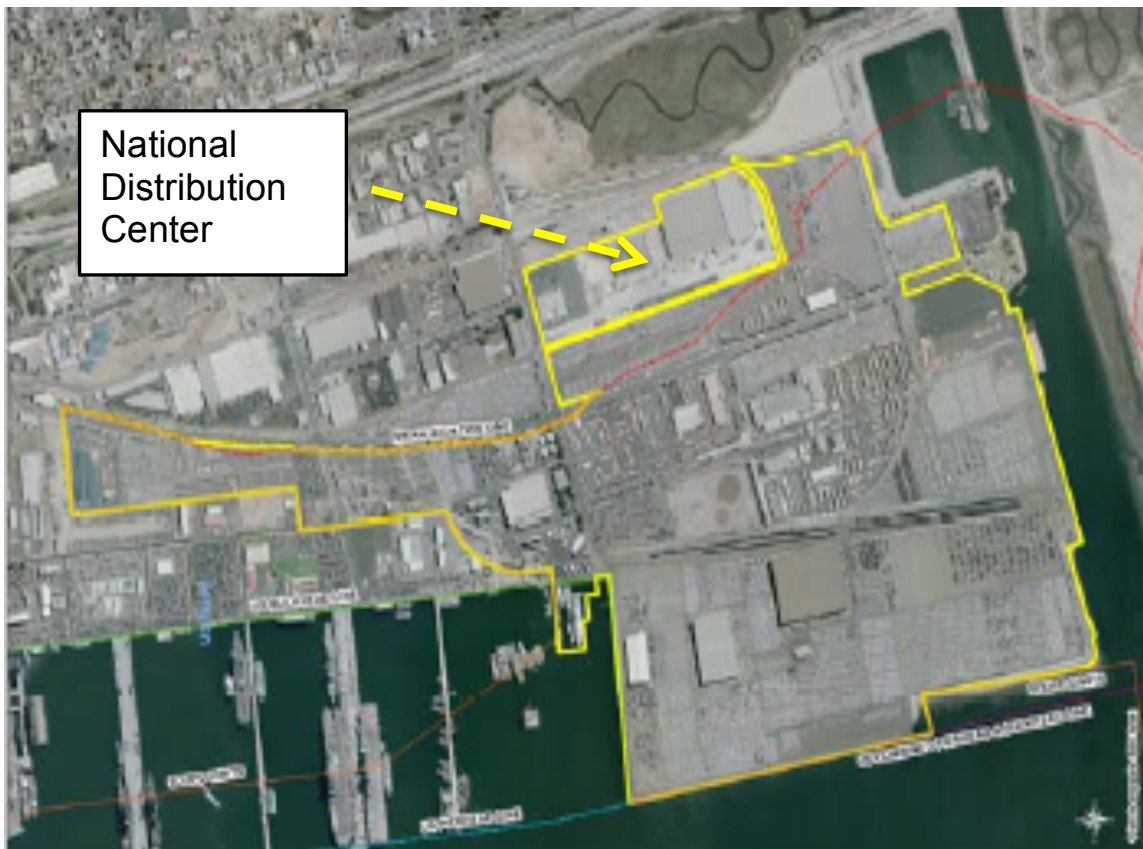
A potential relocation site for Dixieline’s operations is an area along Tideland Avenue where PAS currently stores trucks and vehicles for long-term storage. This area is approximately 14-acres and is currently a Tideland Use Occupancy Permit property for PAS. Additionally, if the PHTL service is relocated then use of Berths 24-1 may be used to reduce the dray from the barge discharge site to the storage site. Rail access can be made available at the relocated site.



Possible Relocation Site for Dixieline

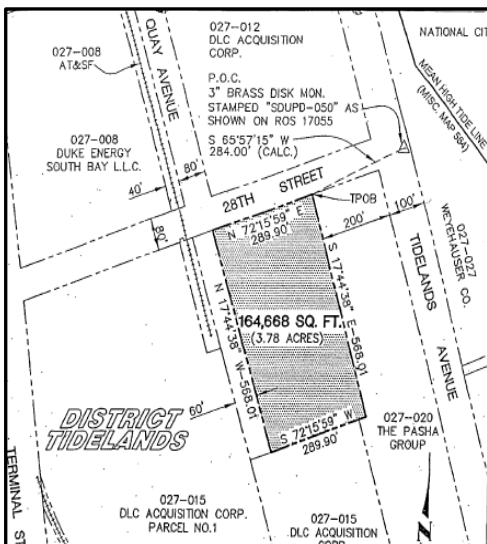
Warehouse and Distribution – National Distribution Center

The 2008 Business Plan identifies the National Distribution Center as a 342,400 square foot non-maritime tenants, military household goods, lumber, and miscellaneous operation and storage. The facility is located between the existing National City BNSF Rail Yard and the BNSF property. It is on the eastern most boundaries of the Optimization Study project area.

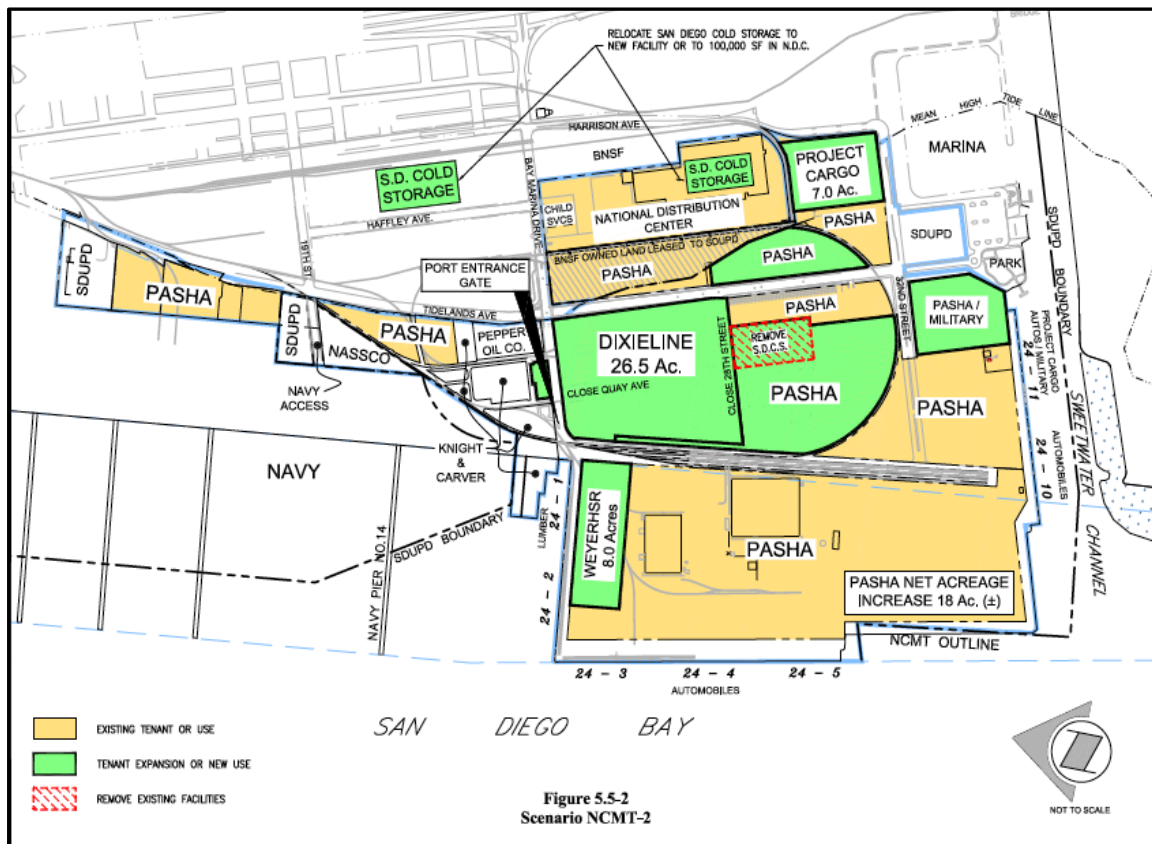


In the 2008 Business Plan for maritime cargo tenants, 44,320 square feet of the Center was identified for the handling of military household goods associated with the Pasha operations. In 2005 - 2006, approximately 55,000 metric tons of military household goods were handled at this facility. In addition to Pasha, Dixieline was identified as having 77,000 square feet of space at the Center.

Although not located within the boundaries of the National Distribution Center but within the study area, is a Cold Storage facility. This cold storage facility operates as PLA-ART International (DBA San Diego Cold Storage), located on West 28th Street. The Lease commenced on July 1, 2005 and will end June 30, 2025. The facility consists of approximately 164,668 square feet of tideland area, and its use is for cold and freezer warehouse operations. The facility is both rail and truck served.



Due to the Non-Maritime nature of the PLA-ART uses, the 2008 Business Plan recommended that this cold store facility be relocated away from the NCMT to enable greater automobile capacity.

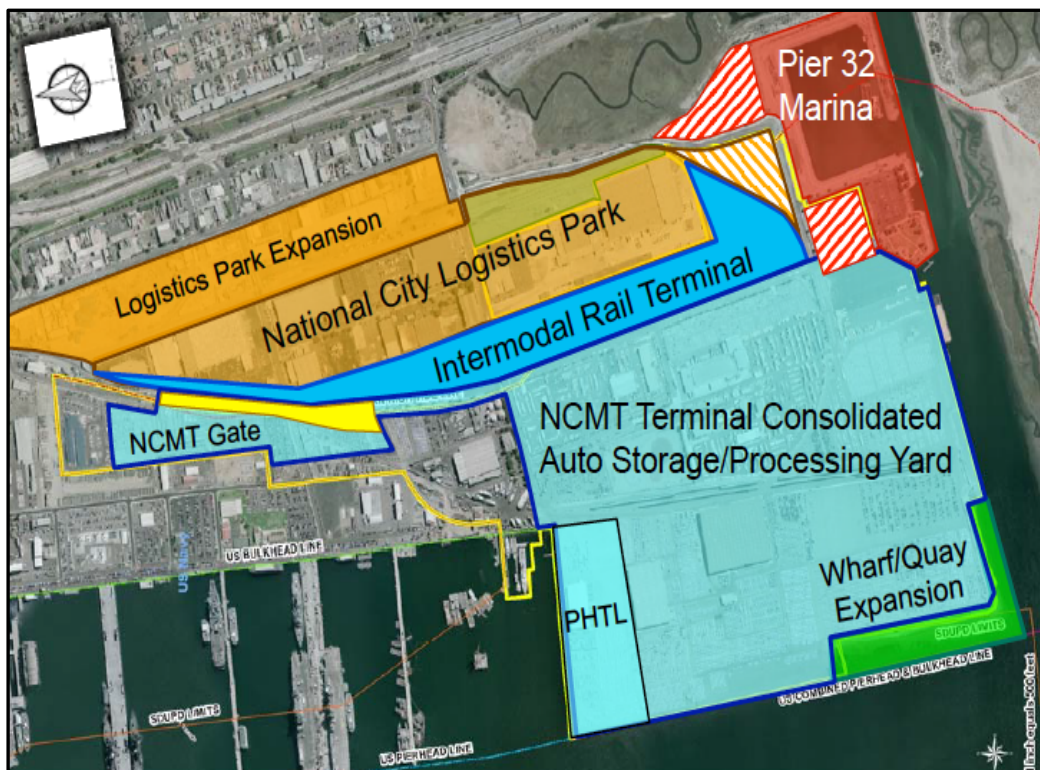


The proposed sites for the relocation were either inside of the National Distribution Center or on the Haffley Avenue site between 19th and Bay Marina Drive.

The Optimization Study recommends the relocation of the PLA-ART facility to a site within a new and proposed Logistic Park site. This will provide for a more consistent use of the SDUPD Tidelands property for marine transportation activities.

The 2008 Business Plan discussed an Inland Port Concept as a way to handle anticipated growth and to reduce the spatial demands and congestion forecasted for NCMT. The Optimization Study, likewise, looked at the need for Inland Port freight areas. **However, the Study concludes that by optimizing the use of the tidelands trust property for maritime uses, by improving intermodal access and capabilities at NCMT, and by improving overall accessibility to NCMT via the I-5 Civic Center ramps, the Port may be able to achieve the benefits often assigned to an “iland port” distribution facility while eliminating costly land transfer and associated environmental impacts.**

The use of the National Distribution Center, as an anchor facility, to a larger Logistics Park will act as a regional collection and distribution point for goods movement. Currently, such as Dole Fresh Fruit, Dixieline (Lumber), and Pasha Hawaii Transport Lines, can take full advantage of a rapid transfer to and from the port of goods and equipment thereby avoiding long-term storage on the marine terminal.



The Optimization Study took a long-term view of NCMT and TAMT maritime uses and activities, rail and truck services, location to the Mexico/US border, and industrial nature of the adjacent property in National City.

Combining these four primary transportation nodes and assets, the Optimization Study proposes a long-term Logistic Park concept as a partnership between the BNSF, City of National City, private-land owners, and the SDUPD adjacent to NCMT.

The concept of warehouse / distribution logistic parks is not a new one. In fact throughout the United States, economic development entities are attempting to attract private investment and operators to initial these types of activities.

Today's Freight Logistics Park Defined:

There is a wide array of benefits to be derived from improved logistics capabilities in the immediate vicinity of the NCMT. The range of functions of modern freight logistics zones is wide from simple cargo consolidation to advanced logistics services.

Due to the long distances over which supply chain management is being carried, intermodal and distribution strategies must be accommodated at strategic locations. Port and rail centers tend to be ideal locations for freight logistics centers. Also, due to complex supply chain practices, additional operations need to be performed on the

cargo and the freight loads while in transit to the final destination. These added value services are found in today's modern freight logistics parks.

Generally the larger the distribution logistics center, the lower their operational costs. Logistic zones or Freight Distribution Clusters (FDC) expand these advantages through external economies of agglomeration implying that the concentration of distribution centers within the cluster, even if they concern different supply chains, has the potential to reduce an array of logistics costs.

The logistics services are the "software" of the logistics distribution platform. These are the different activities performed by private and public entities that enable an effective movement of cargo through the various customer supply chains. A broad variety of services are provided including cargo handling, consolidation, packaging, brokerage services, transportation, and consulting, among others.



Logistics parks, distribution centers, and warehouses are all logistics facilities that supply infrastructure to provide a suitable environment for the purpose of storing goods and materials that require protection from the elements, and add value to the supply chain management of the commodities and logistics services controlled.

Logistics warehousing facilities today are more and more incorporating designs with higher bays, sophisticated, sometimes fully automated, materials handling equipment, broadband connectivity access, and better access to distribution networks. These facilities provide a wide range of storage alternatives, material handling options and software to meet the physical and operational requirements of the modern logistics warehousing. Thus, a key design requirement for today's modern logistics facilities must be flexible and expandable to accommodate future operations and storage needs as well as mission changes.

While there are many examples throughout the United States that can be identified where new Logistic Parks and Distribution Centers are either located or being proposed, the Study looked at the BNSF Logistic Parks because of the potential partnership relationship between the Port and BNSF. A primary benefit cited for a Logistics Park is substantial lower transportation costs. With fuel costs and more stringent emission standards, reducing the miles along the supply chain is crucial. To that extent, BNSF has created Logistics Parks in the following locations:

- Stockton
- San Bernardino
- Kansas City
- Dallas/Ft. Worth
- Chicago

- Memphis

For BNSF these are strategic location that provide easy service to major markets with a capable intermodal network. In some cases, to accommodate international shippers, some of the parks have foreign trade zone benefits. Taking into account the near cross-border goods movement, the intermodal connection depicted in the Long-Term Vision, a major automobile processing and distribution operation, a Foreign Trade Zone Grantee, and two marine terminals the National City Logistics Park may have sufficient elements to provide the economic requirements for this type of distribution center.

Finally, direct access to intermodal rail and marine terminal capabilities is a unique and substantial added value for freight logistics facilities and in many instances a potential primary driver for relocating freight logistics systems to the new National City Logistics Park.

SECTION XI – INTERMODAL RAIL SYSTEM

The Port of San Diego mainline “*Rail Trade Corridor*” is the San Diego subdivision of the **LOSSAN Corridor (Los Angeles – San Luis Obispo – San Diego)** owned by the San Diego Metropolitan Transit System (MTS) and the North County Transit District (NCTD). SANDAG is responsible for the planning, design and construction of capacity improvement projects on the Corridor.



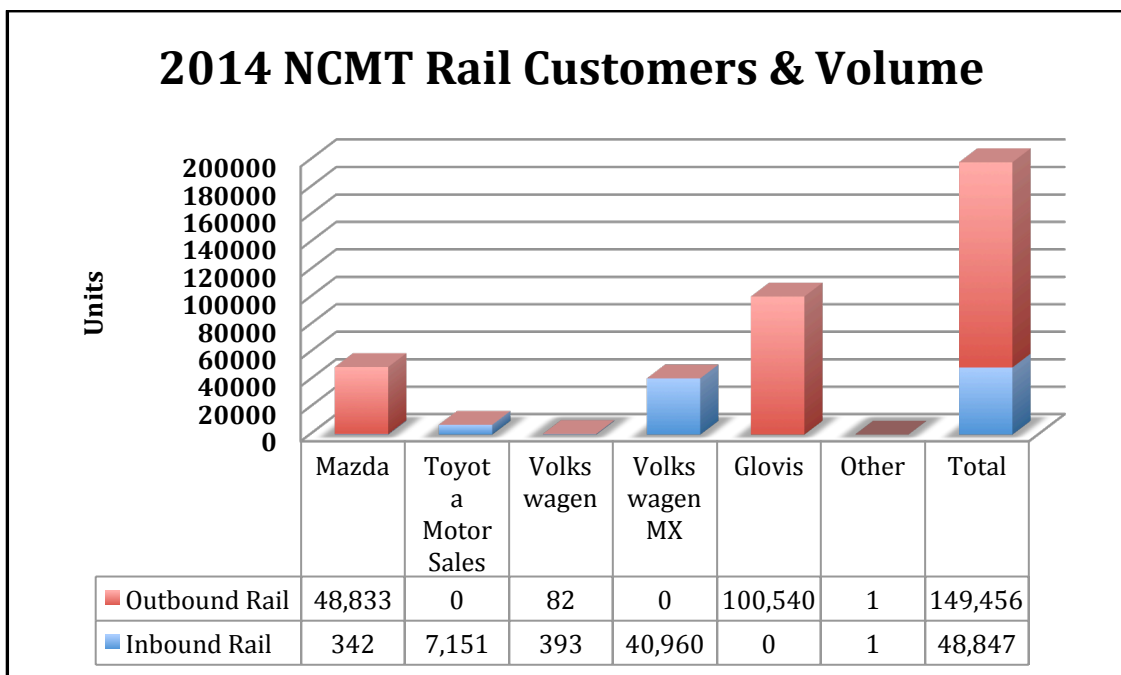
This corridor is the only viable freight rail link between San Diego and the rest of the nation. Good movement along this coastal rail corridor is critical to the San Diego region's economic prosperity.

BNSF Railroad operates the mainline freight network to and from San Diego. BNSF also is responsible for yard switching activities in support of local National City industries. The final BNSF mainline service to San Diego ends near at their Caesar Chavez Rail Yard. Rail service south of there is done by the BNSF yard switching operations. The automobile/vehicle train service at National City Marine Terminal is operated on SDUPD owned track (located on the terminal). The loading and unloading of automobile/vehicle rail cars ("auto racks") is performed by the Pasha Automotive Services. Within the project study area, there are private rail spurs and sidings that support local private industries between the San Diego yard and National City.

A SANDAG analysis has concluded that improvements to the trade corridor will increase corridor mobility by providing a cost competitive alternative for movement of heavy bulk materials. The analysis suggests that throughput could double the daily freight trains.

Rail Customers

Lumber for Dixieline from the PNW is delivered by BNSF, and it is currently unloaded on a siding on Quay Street. By far, however, the largest single business for BNSF in the San Diego market is the automobile market that includes the BNSF Toyota operations, inbound Volkswagen automobiles from Mexico, and outbound GLOVIS and Mazda North America automobiles. In 2014 the following NCMT inbound and outbound rail operations, excluding Toyota Units at the Caesar Chavez Yard, were reported:



NCMT Rail Capacity and Limitations

NCMT has 14,800 feet of on-site rail track that includes six spurs of approximately 2,500 feet each. This allows for a capacity of approximately 120 conventional auto racks (94 feet in length) or 85 Auto-Max rail cars (141' 5" in length). A BNSF "auto rack" (rail car) holds between 10 to 24 units (Bi-level rail car – 10 medium size vehicles, Tri-level rail car (15 vehicles), and Auto Max (24 vehicles). All of these auto racks are supplied to PAS by BNSF at the NCMT. Using rail to transport automobiles provides direct transportation benefits to both the auto manufacturers (OEM's) and the community. The automobile manufacturers in the Far East use the NCMT as a gateway primarily to the Texas market. The local benefit of intermodal rail is the reduction in truck trips on local streets and interstate highways.



Auto Max Auto Rack - 141 feet and 24 vehicle capacity



Bi-Level Auto Rack - 94 feet and 10 medium size automobiles



Tri-Level Auto Rack – 94 feet and 15 medium size automobiles

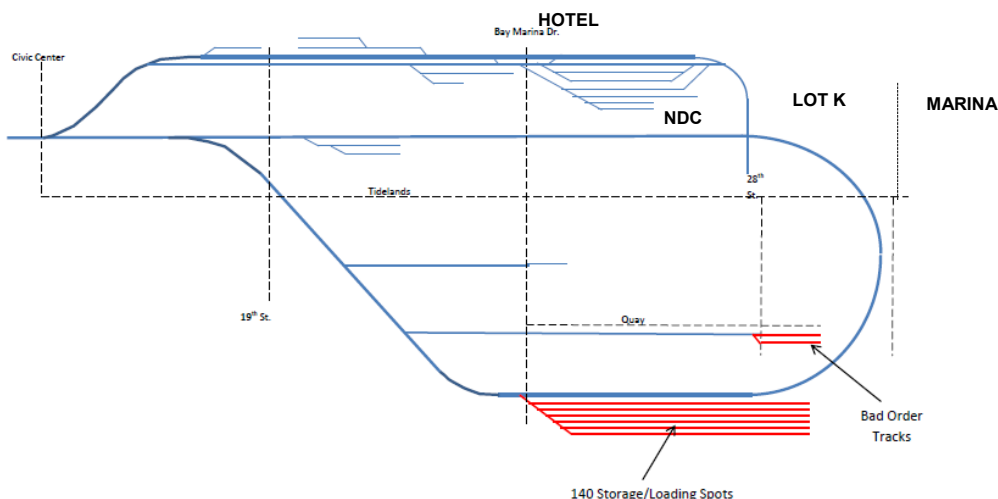
Based upon a 6,000 - foot unit train, the conventional auto racks would consist of approximately 63 standard rail cars and the Auto-Max would consist of 42 rail cars. In most instances there will be a mix of conventional auto racks and Auto-Max racks. Operational issues on the mainline north of San Diego generally limit the maximum length of a train to 4,000 to 7,000 feet depending on the time of operations.

The loop track on the NCMT is a crucial feature for the intermodal services. This track allows inbound and outbound rail cars to be switched to and from the loading tracks without blocking traffic. The PAS personnel loads the rail cars on the loading tracks, and the BNSF Switching crew will assemble a full-length train.

A limiting factor for the automobile intermodal services, identified in the 2008 Report, was “limited rail storage”. The report stated only “one track of 4,000 feet is considered true rail storage”. The lack of storage resulted, at that time, in the use of loading tracks for storage. While there are storage tracks near the Cesar Chavez Parkway and on a North siding at 32nd Street, use of these tracks for storage often result in delays in loading of the trains and more important delays in switching to optimize the use of the “freight windows” on the LOSSAN corridor.

The NCMT loop track remains an essential feature of the automobile intermodal rail services offered by PAS and BNSF. On this track, PAS loads a full-length train for their customers. As a result of a lack of rail-car storage and frequency of switching operations, the PAS and BNSF operations generally assembly one (1) train per day for automobiles although the BNSF service can support two (2) automobile train per day. The ability to assemble a full unit trains requires coordination between the loading operations at the Terminal, the switching of rail cars, and the eventual building of the train. This on-dock unit train rail capability has provided PAS with a competitive advantage within Southern California for Far East automobile manufacturers. In addition, the use of intermodal rail optimizes the storage and throughput capabilities since these automobiles generally have a shorter dwell.

- NCMT presently has 6 on-dock tracks usable for railcar loading or unloading
- Combined nominal holding capacity of these 6 tracks is about 140 railcars, depending on the mix of railcar-types, but because of the need to have breaks in between sets of cars, effective capacity is closer to 120 railcars
- As shown in the schematic diagram below, these 6 tracks are stub-ended, so cuts of railcars are shoved in, or pulled out, from the north end



Mercator Report (2013)

Benefits of Intermodal Rail Operations

While the 2008 Business Plan suggested that nearly 225,000 truck trips were reduced by the use of rail services in and out of the Port region, if NCMT generates a daily unit train of 46 auto racks (low end of the unit train capabilities) with an average of 20 vehicle per auto rack, this would be equivalent to 185 daily round trip truck trips per day in National City or over 550,000 round trip truck trips annually²⁰.

The benefits of using the NCMT as an intermodal gateway provide direct market driven advantages for the automobile manufacturers. Based upon 2012 automobile sales by states, Texas follows California in dealership sales and average per dealership²¹. For automobile manufacturers producing cars in the Far East, the use of west coast ports and rail provides the most cost-effective transportation link. For NCMT, this should also result in shorter dwell time and greater operational efficiencies through the terminal for vehicles destined for these inland locations (e.g. move more cars per acre).

²⁰ 20 time 46 = 920 units per day. Auto transporter carriers approximately 10 units therefore 92 trucks trips are generated by the 920 units. Each truck makes 2 trips (empty in and full out) = 1,840 daily truck trips time x 300 = 552,000 truck trips

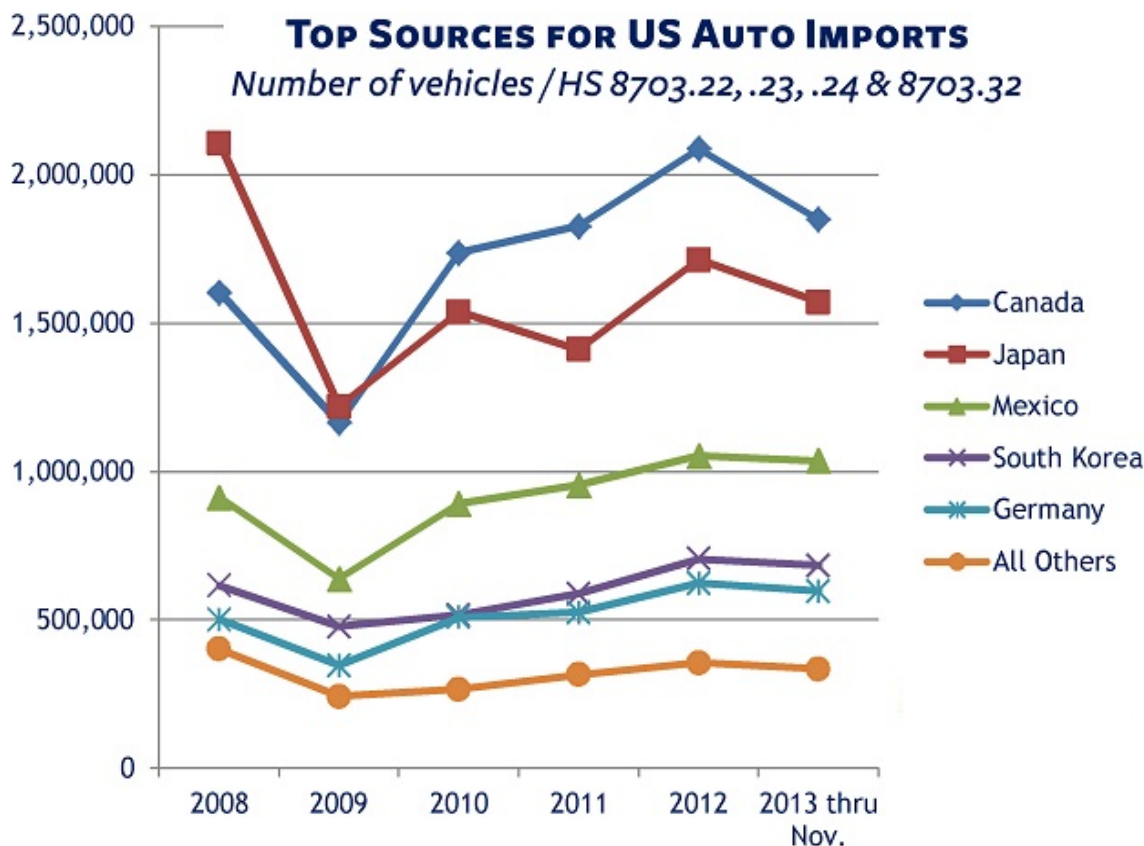
²¹ North America Dealership Association statistics

State	All dealerships (millions)	Average per dealership (thousands)	State	All dealerships (millions)	Average per dealership (thousands)
Alabama	\$9,568	\$31,893	Montana	\$2,741	\$24,692
Alaska	\$1,312	\$37,498	Nebraska	\$5,010	\$27,530
Arizona	\$14,685	\$59,696	Nevada	\$4,888	\$47,922
Arkansas	\$6,044	\$28,114	New Hampshire	\$4,500	\$31,917
California	\$77,524	\$56,836	New Jersey	\$22,704	\$48,827
Colorado	\$12,437	\$47,833	New Mexico	\$3,615	\$31,162
Connecticut	\$8,788	\$33,039	New York	\$39,138	\$44,627
Delaware	\$2,349	\$42,713	North Carolina	\$19,930	\$34,421
Florida	\$47,024	\$55,128	North Dakota	\$2,886	\$31,719
Georgia	\$20,270	\$39,131	Ohio	\$24,794	\$32,710
Hawaii	\$1,816	\$25,938	Oklahoma	\$19,148	\$68,633
Idaho	\$2,822	\$25,200	Oregon	\$7,069	\$29,661
Illinois	\$27,304	\$35,974	Pennsylvania	\$27,283	\$28,932
Indiana	\$12,621	\$29,489	Rhode Island	\$1,918	\$37,606
Iowa	\$7,608	\$23,555	South Carolina	\$8,299	\$32,041
Kansas	\$5,695	\$24,979	South Dakota	\$2,666	\$25,885
Kentucky	\$7,163	\$27,444	Tennessee	\$13,802	\$40,006
Louisiana	\$9,469	\$32,430	Texas	\$63,331	\$52,732
Maine	\$3,046	\$24,367	Utah	\$5,953	\$41,632
Maryland	\$13,393	\$44,200	Vermont	\$1,638	\$19,042
Massachusetts	\$15,524	\$38,426	Virginia	\$18,165	\$36,771
Michigan	\$13,494	\$21,218	Washington	\$12,030	\$36,454
Minnesota	\$9,635	\$26,763	West Virginia	\$3,856	\$26,233
Mississippi	\$5,078	\$26,309	Wisconsin	\$11,958	\$23,447
Missouri	\$13,122	\$31,848	Wyoming	\$1,333	\$20,514
			Total U.S.	\$676,439	\$38,358

Source: NADA Industry Analysis Division, U.S. Census Bureau, R.L. Polk & Co.

Primary competition for the Southern California market share for automobile imports from the Far East is between the Ports of Hueneme and San Diego. Long Beach has a Toyota facility that is primarily for their vehicles, and WWL operates the former NISSAN facility that handles only Nissan. The WWL facility is 85 acres, with on-dock rail, and storage capabilities of 8,000 units.

Recent trends, however, show that the Japanese manufacturers have declined over the past five years while South Korea has increased its share. European manufacturers will not be candidates for rail from the West Coast, and Mexico delivers cars to San Diego by rail and these units are trucked away.



Another market consideration that may impact inbound intermodal rail from the Far East is the production in the United States of Japanese and Korean automobiles. For example, in 2013, America Honda became a net exporter in the U.S. for the first time exporting 108,705 US made Honda and Acura vehicles versus the 88,537 vehicles it imported. In recent year both the Japanese and Korean have invested billions of dollars to expand its US and North American auto production operations. In some instances, the American Honda may have future export potential via intermodal rail than import.

Along with market consideration, the single most operational constraint for intermodal rail freight projects at the Port of San Diego is capacity on the LOSSAN corridor. At present, BNSF operates freight rail service seven days per week. Typically, six (6) to eight (8) freight trains are operated (3 to 4 inbound empty trains and 3 to 4 outbound loaded trains). This freight service is both local and national in scope. The current single-track configuration on portions of this mainline constrains railroad capacity negatively impacting BNSF's ability to conduct their goods movement services.

An automobile unit train departing the NCMT can move on a "hook and haul" basis. A full train's length can be up to 72 rail carriers ("auto racks") depending on the mix of rail cars. "Hook and haul" refers to having a full unit train readied for transport at the NCMT. BNSF will then connect road power the full train and it will travel north through San Diego. Compared to other trains that may have to be shifted at the mainline area near downtown, the automobile train can be pulled directly from NCMT and be out of San Diego within 30 minutes. The BNSF freight corridor travels along the coast through the

Los Angeles Metropolitan Area. This main line is shared with AMTRAK and regional public passenger transportation entities.

Of the freight trains operating on this corridor, only one (1) automobile freight train per day during weekdays. The preferable hours of operation are 9 AM and 2 PM.

With market pressures growing for more intermodal services and the need to increase the number of automobile unit trains originating from NCMT, the Optimization Study suggests that a joint strategy be implemented between BNSF, PAS, and SDUPD.

Rail Car Storage Needs

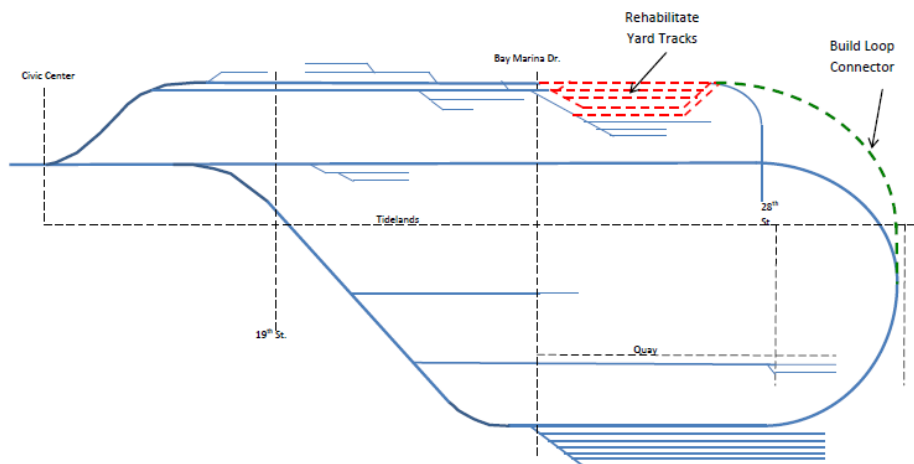
A second major constraint that impacts the automobile intermodal services is a lack of true storage tracks. As stated earlier, the lack of true storage tracks leads to loading tracks being used for storage, which in turn limits the Terminal capacity. Taken into consideration with the windows of operation on the BNSF main line, these become major limits for optimization.

The 2008 Business Plan identified this constraint, but stated that capacity improvements involving double tracking (adding a second track in areas where only a single track is present on the main line), eliminating curves, and shortening the length of the line through methods including tunneling realigning, and grade spearing were being analyzed as regional for rail freight operations. In 2008, while BNSF suggested additional land should be allocated for rail storage track, due to space constraints on site and the high value of open storage areas for the automobiles, it was decided not to sacrifice paved areas for new track.

The Mercator 2013 Report suggested that a buffer of empty railcars had to be located close to the terminal in order to improve operational throughput. While Mercator identified the branch line that exists between South 32nd and North W. 8th (60 rail car capacity), the report concluded that this location was too far from the terminal to meet the needs of PAS, and further the switching time to meet the operational windows are far too long.

To that extent, in 2013 Mercator suggested that BNSF was prepared to rehabilitate their existing National City BNSF Yard, and that a new connector track could be installed that will enable PAS to operate a switching service between the BNSF Yard and the NCMT loading tracks. This new switching service would utilize a “track mobile” piece of equipment, and it will permit a timely deliver of empty rail cars to the loading tracks to support a second mid-morning loaded northbound train.

- PAS and BNSF are proposing to rebuild several tracks within the under-used BNSF-owned switching yard located in between the National Distribution Center and Bay Marina Drive, and to build a new track connecting the south end of the existing loop track with that BNSF Yard
- This proposal would add 30-45 railcar spots, depending on the extent of the yard rehabilitation
- However, the loop connector would bisect land parcel 025-101 (a.k.a "Lot K"), immediately north of the marina, and impair the implementation of National City's Vision Plan for the area around the marina – it would also increase noise levels for guests staying at the Marina Gateway Hotel, particularly in rooms facing the rail yard



Mercator 2013 Recommendation


The 2013 Mercator report identified four options to add rail-car storage capacity and went on to make the following recommendations:

- Rehabilitate the National City BNSF Rail Yard ("NC BNSF Yard") and create 30 multi-level spots on five storage tracks.
- Construct a connection from the south-end of the NC BNSF Yard.
- Provide PAS with 117 to 120 acres of open area in the near term (2013/2014).
- Close 28th Street, Quay Ave, and Tideland (28th to 32nd) to create a new 4.8 acres of terminal capability.
- Complete the improvements on the former tank farm property (adds 5.7 acres)
- Consider alternative uses for the lumber property.
- Use a portion of Parcel K for the rail connector.

In the 2014 Mercator report, the following operational recommendations were suggested:


- The current NCMT terminal operator is capacity constrained.
- Augment rail capacity with daytime trains to ease peak period vehicle storage demand.
- Building a multi-level parking structure is not a viable solution to the capacity constraints.
- Realignment of existing tenants is a means to expand capacity.
- Relocation of certain tenants should be considered as part of the Port's long-term plan.

One of the main features of the Optimization Study was to review the analysis and recommendations of the two Mercator Reports. The NCMT key optimization strategies include:



NCMT Key Optimization Strategies

1. Preserve and enhance the maritime cargo terminal areas at NCMT through realignment of parcels, street closures and terminal improvements.
2. Increase intermodal rail switching, car storage and rail terminal capacity at the NCMT.
3. Focus planning and marketing efforts to establish a National City Logistics Park using the current National Distribution Center.
4. Continue to support the Pasha Hawaii Transport Lines (PHTL).



The preservation and enhancement of the maritime cargo terminal areas at NCMT through realignment of parcels, street closures and terminal improvements are consistent with the findings and recommendations of Mercator. Regarding the increased intermodal rail switching, car storage and rail terminal capacity, the Optimization Study built its findings and recommendations on the work previously provided by Mercator. The chief findings and recommendations of the Optimization Study include:

- Reactivate the National City BNSF Rail Yard to meet the short and medium term demands for rail car storage for NCMT.
- Connect the National City BNSF Rail Yard to the existing NCMT loop track and the existing loading tracks.
- To accommodate a second automobile train at the existing mid-morning window implement a new PAS switching operations between the storage tracks and the loading tracks on NCMT.
- As the market begins to reach 600,000 units per year at NCMT and an intermodal split of 50% rail and 50% truck, begin planning to improve and move the current loading tracks to a new BNSF Intermodal Yard to be located on

existing BNSF property adjacent to the NCMT. The Optimization Study refers to this as the “Back of the House” intermodal yard.

The Optimization Study review the options identified by Mercator in its 2013 Report (Page 34, February 3, 2013):

OPTION	ESTIMATED TTL GRADE-FEET OF SIDING(S)	ESTIMATED LENGTH OF TANGENT TRACK	# OF TURNOUTS	ESTIMATED APPROX COST TO BUILD	RAIL-CAR SPOTS
A alone	1275	960	2	300000	11
B-1 alone	1745	1425	2	400000	16
A + B-1	3120	2805	2	680000	32
B-1 + B-2	3175	2540	4	740,000	28
A + B-1 & B-2	4550	3920	4	1020000	44
C alone	1685	1365	2	390000	15
A + B-1 + C	4805	4170	4	1070000	47
D-siding 1	1720	1405	2	400000	15
D-siding 2	1405	1090	2	330000	12
D - sidings 1/2	3125	2495	4	730000	27

In summary, the Mercator Options included standalone and combination of parcels to accommodate between 11 and 47 rail car spots, the length of track was from 960 feet to 4170 feet, and costs ranged from \$ 300,000 to \$ 1,020,000.²² Not shown above is the option to improve the BNSF National City Yard and provide a connector to the NCMT loop track.

The Optimization Study assessed each of the ten (10) alternative identified in the table above plus the BNSF National City Yard option with the connector track. The principle criteria used by the Optimization Study includes:

- Avoid options that use a combination of BNSF property and SDUPD property for operations.
- Select the option that has one principle property owner.
- Seek maximum storage capabilities to support a two automobile train per day capability.
- Select the option that has the least impact on other SDUPD maritime tenants and leaseholders.
- Select an option that provides the “best service at the least cost”.
- Seek an option that is consistent with the long-term maritime optimization for NCMT.

²² pp 29 to 32 Assessment of Land/Rail Capacity Needs for National City Marine Terminal, February 03, 2013.

After evaluating the various options, the Optimization Study recommends for the short and medium term intermodal rail service two options. Option 1 uses the re-activated BNSF National City Rail Yard and the second option uses BNSF property adjacent to the NCMT.

The two final options evaluated for providing short and medium term intermodal rail capability to NCMT are described below.



Strategic NCMT Short & Medium Term Intermodal Rail Options

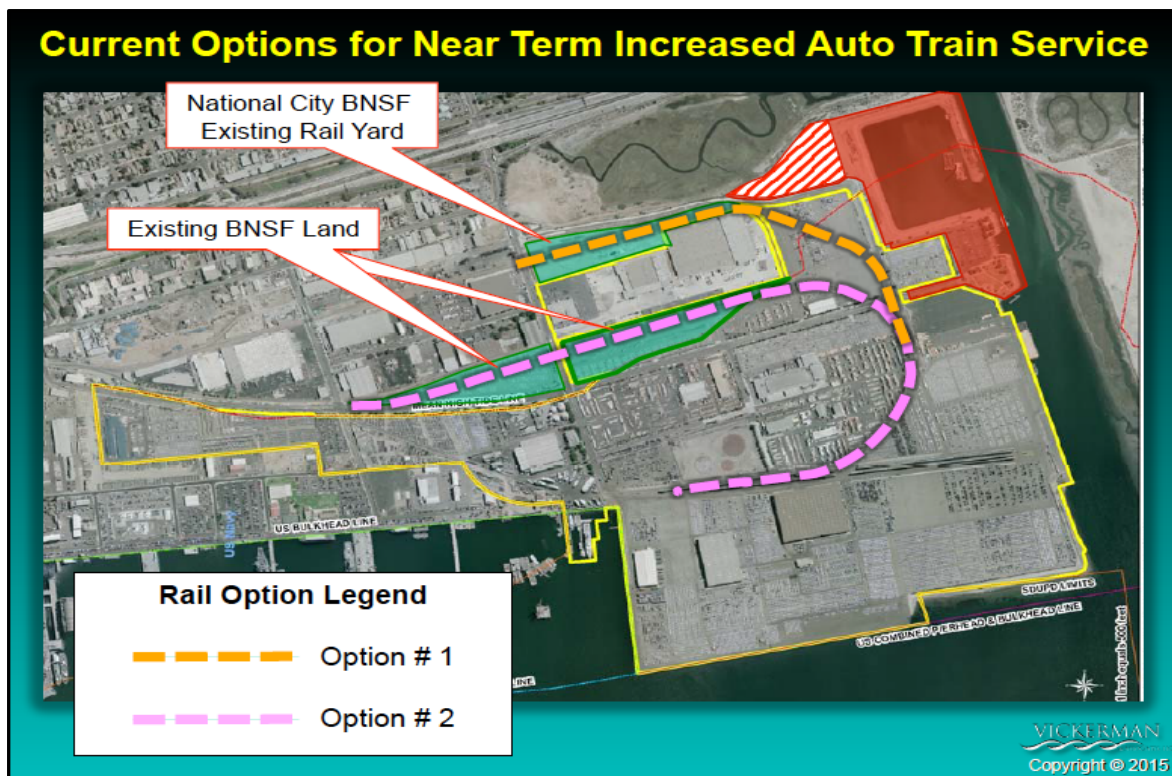
Of the 11 Alternatives Identified by Mercator, the 2 Final Options considered were:

OPTION 1: Use of the current National City BNSF Rail Yard and a **new rail connector track** from BNSF Rail Yard to the existing NCMT loop track.

OPTION 2: Use of existing BNSF land that is currently used by PAS and BNSF for vehicle storage as a **new rail yard and connector track** connecting to the existing NCMT loop track

The NCMT Plan identifies two options to **achieve the additional storage and permit the second vehicle train in the morning**. The Plan recognizes that both options have benefits and constraints. The “*Best Service – Least Cost Principle*” applies...

These two final options are depicted in a site plan and layout perspective.



The Optimization Study finds the preferred option to be pursued is Option 1 in partnership with the BNSF and PAS. The factors that were used in making this recommendation included the following:

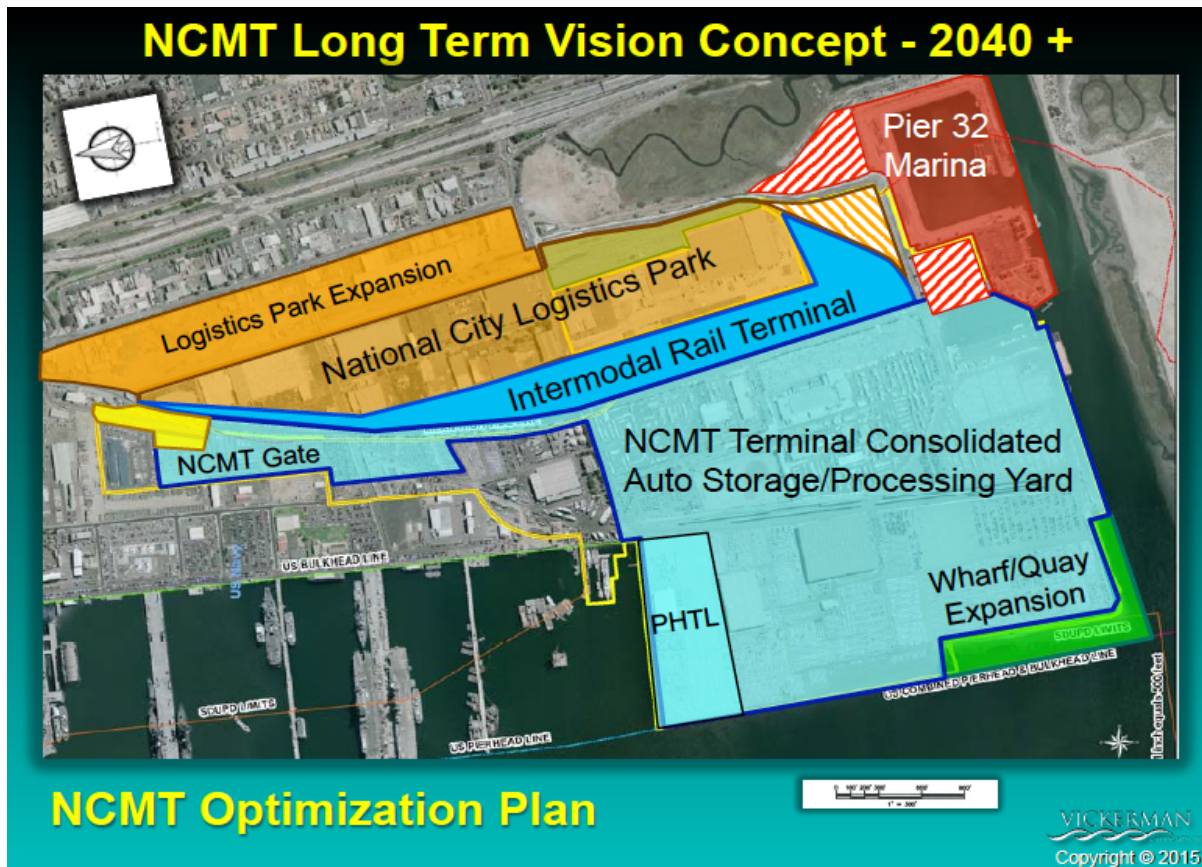
- Option 1 utilizes the existing BNSF National City Rail Yard for storage capabilities while Option 2 requires that a second and new Rail Yard capability to be constructed. While the new Rail Yard would be constructed on the site of the long-term intermodal yard, the market conditions are not sufficient to support this new investment at this time.
- Both Options provide the back door access to the NCMT loop track. A connector track and back door option is essential for the timely delivering of empty rail cars to the NCMT loading tracks as soon as the evening full outbound train departs the facility.
- Both Options provide for the use of a track-mobile to move empty automobile rail cars from storage to the loading tracks on NCMT. This move will be made by the PAS thereby not taking up the switching time and capabilities of the BNSF.
- Both Options will provide for the timely switching of the empty rail cars and the loading of the rail cars at the NCMT loading tracks in order to meet the existing operating window for the mid-morning train.
- BNSF supports Option 1 and is prepared to move forward with implementation in a timely fashion to meet market demands. BNSF the property owner of the

Option 2 site is not inclined to make further infrastructure investments when existing infrastructure capabilities are current available and unused.

- Option 2 reduces the automobile storage area for PAS and the BNSF Toyota activities. While Option 1 will also reduce storage to provide for the connector track, the overall benefits derived from the connector track and the reduced dwell for additional intermodal traffic does not adverse impact the PAS operations.

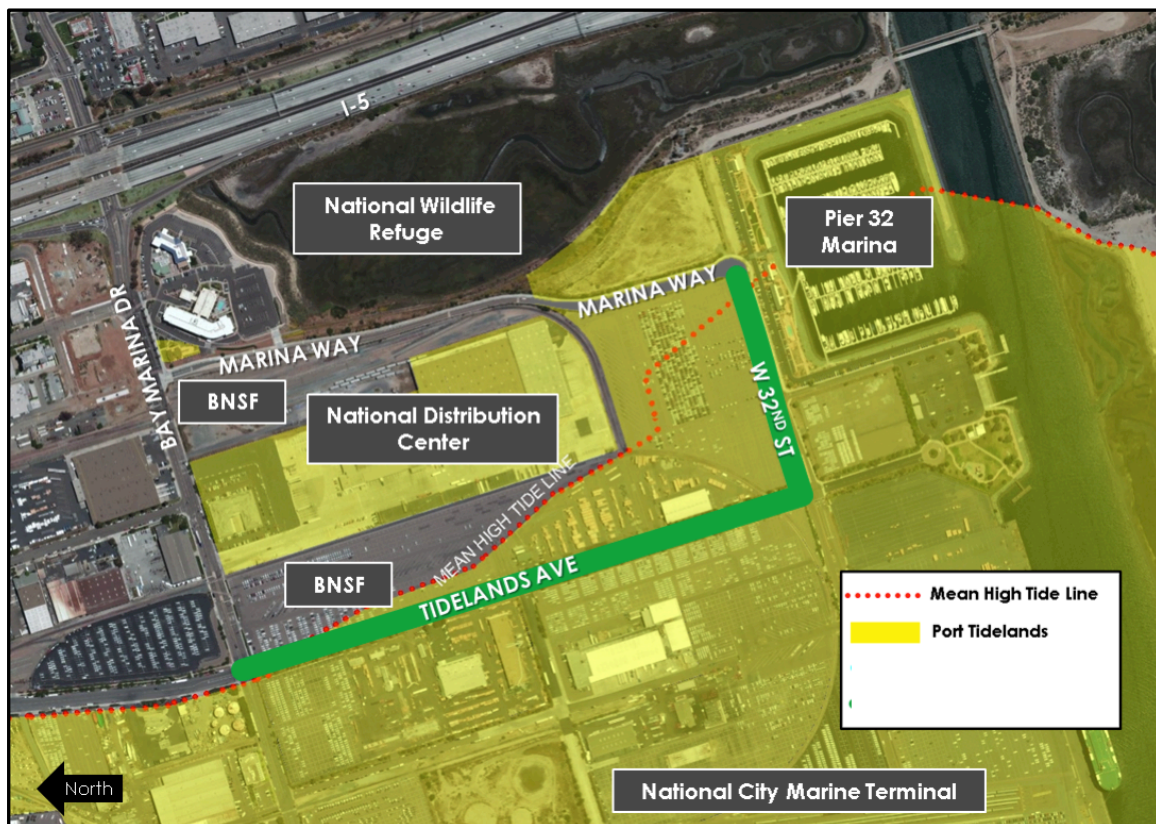
The Optimization Intermodal Rail Study recommends the following:

- Reactivate the use of the BNSF National City Rail Yard and add a connector to the loop track.
- Build short and medium term growth capabilities to support between 400,000 and 800,000 with a 50:50 Intermodal Split. When the automobile throughput reaches the 600,000 unit level initiate planning and consider improvements to move the existing loading tracks to a new Intermodal Yard. The PAS ability to grow is dependent on the SDUPD's actions.



SECTION XII – STREETS, ACCESS AND EGRESS

Since the completion of the 2008 Business Plan, the SDUPD and PAS have been in discussions regarding the closure or partial closure of specific streets. Provided that a street is on the Port Tidelands property (within the Mean High Tide Line), the SDUPD has the ability to consider closing the street; a closure may require a Port Master Plan Amendment depending on the land use designation in the Port Master Plan.



The 2008 Business Plan recommended as part of the long-term development strategy to close Quay Avenue and 28th Street. At that time, it was proposed that this area be incorporated into an expanded Dixieline operation. Since the waterborne service of Dixieline has declined, the Optimization Study recommends that this property be added to the PAS for automobile services.

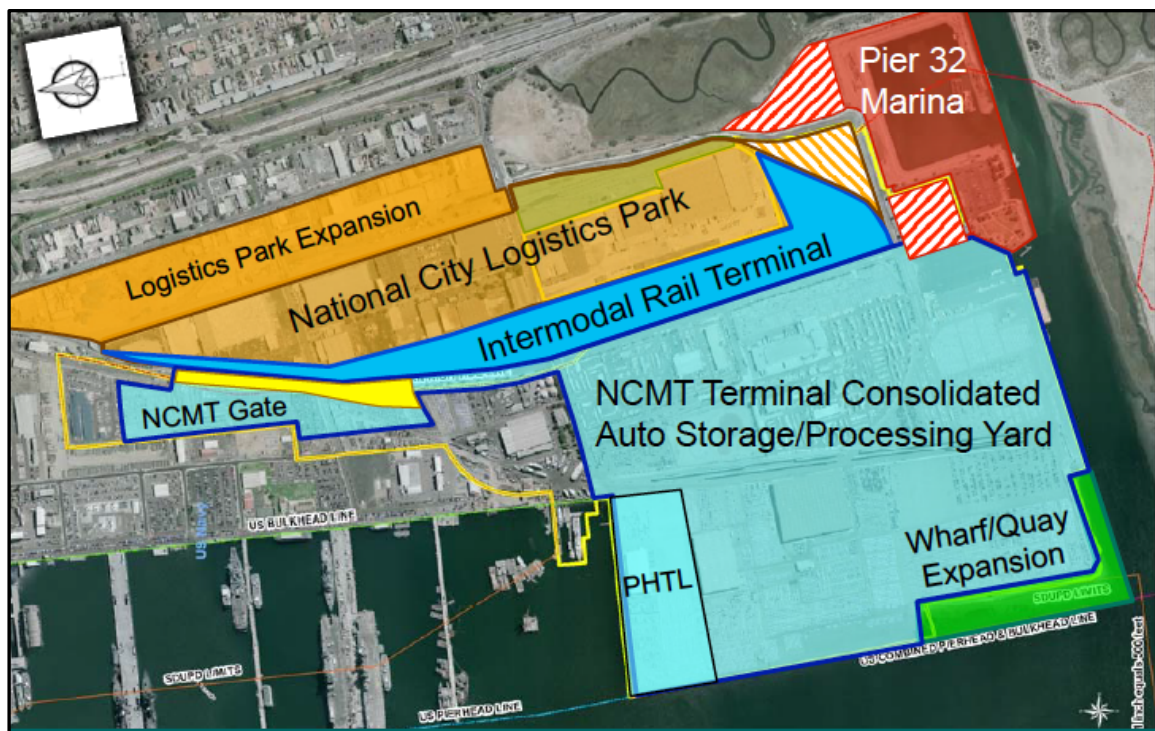
The 2013 Mercator Report recommended:

- Close 28th Street west of Quay Avenue to create an additional 0.7 acres for automobile services.
- Close off Quay Avenue between Bay Marina Drive and 28th Street to create an additional 1.3 acres.
- Close off Tideland Avenue between 28th and 32nd Streets to create an additional 2.8 acres.

The Optimization Study concurs with these recommendations provided that appropriate access can be provided to any existing non-PAS customers that rely on these roads for access or egress. Further, the temporary Tideland Avenue Bike Path needs to be relocated to a site away from the tidelands property.

CENTRAL GATE (ACCESS AND EGRESS)

The NCMT Optimization Study has identified a general area designated as a Central Gate for the Long-Term Vision option (indicated in yellow in the following slide).



It must be noted that no traffic analysis, gate design, or operational elements were included in the scope of the Study. The Central Gate concept is one that is employed to benefit the traffic flow into the NCMT Terminal Consolidated Auto Storage Processing Yard. The Central Gate is identified since the new Intermodal Rail Terminal will require the closure of the Bay Marina Drive and the creation of a new Access and Egress from I-5 and Harbor Blvd. at Civic Center Drive. ***There is no intent to adversely impact any private landowners, other non-PAS tenants/customers of SDUPD, and/or non-Port users.***

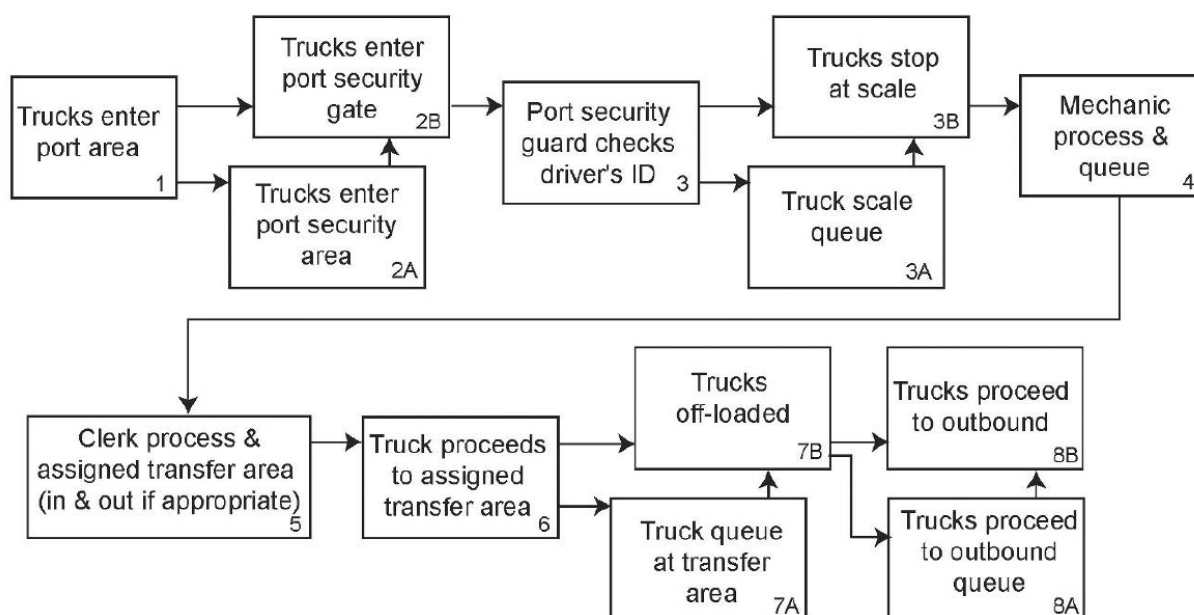
Appropriate access and egress lanes will have to be incorporated into the traffic analysis and transportation planning and design for Tidelands Avenue in the vicinity of the new Central Gate. The planning and design of the Centralized Gate complex must be an effort that involves all local stakeholders in the planning, design, and operation.

In principle the Central Gate is intended to do the following:

- Meet 33 CFR Access Control for the NCMT automobile terminal and TWIC (Transportation Worker Identification Credentials) in accordance with Port Security requirements and the USCG Captain of the Port.
- Provide access to a public weigh station capability for potential users of the Intermodal Rail Terminal, NCMT, and the National City Logistics Park.

- Provide ILWU and Employee parking away from the cargo storage areas and designated restricted terminal areas.
- Provide Visitor Check-In for the PASHA Group office complex.
- Where necessary, provide equipment interchange for any container and cargo services.
- Provide dedicated non-secure public roads to private lessee, property owners, and non-PAS operations (e.g. ship yards and US Navy). Where appropriate these private and Navy entities should be included in all traffic analysis, changes to road configuration, and security aspects of the Central Gate. In some instances, the US Navy and Shipyards should take advantage of great access and egress security to avoid potential threats to their facilities.
- Provide trucker information regarding designated truck lanes.

From a generic marine terminal perspective, the following diagram depicts the a typical inbound truck gate processing flow.



In the above inbound gate process flow example, each stop an inbound truck driver makes is represented as an activity. In some cases, a truck driver may experience a different activity dependent on the current activity. For example, a truck driver entering the port may go directly to the “security gate” activity if no “gate queue” exists. Each activity utilized will have a unique time and associated cost.

By understanding, the time and cost associated with each activity taking place on the port, the operator and owner can select particular activities or areas of improvement to focus on in order to increase the efficiency of cargo and data movement.

Ultimately the Centralized Gate Complex Concept will need to have a



National City Marine Terminal (NCMT) Optimization Study

comprehensive entry/exit gate traffic engineering analysis conducted to properly size and optimize the Central Gate vehicle flows.