行政院及所屬各機關出國報告

（出國類別：考察）

考察美國、加拿大民間參與投資興建港埠營運之技術

報告書

服務機關：台中港務局

出國人職稱：正工程司兼工務組長　會計主任

姓　　名：吳啟東　黃春男

出國地區：美國、加拿大

出國期間：八十九年十二月六日至十二月十九日

報告日期：九十年三月十二日

目　　次

壹、目的

台中港為規建於台灣西海岸大甲溪與大肚溪間平直沙灘海岸之人工港，為因應港埠營運量快速成長，政府正積極投資擴建港埠設施，諸如改善港口、浚深拓寬航道、增建港區及連外道路，並就可引進民間資金投資部份，諸如碼頭、倉棧設施、各專業區廠房及親水遊憩區推動辦理以為有效落實獎勵民間參與交通建設政策，間接帶動中台灣經濟繁榮，為了體驗美加兩國港埠設施開放民間投資經驗及港區親水遊憩設施成效，奉准於民國89年12月6日至12月19日，考察美國洛杉磯港、長堤港、聖地牙哥港、紐約／新澤西港、舊金山港、蒙特利灣水族館及加拿大溫哥華港，希望本次考察心得，有助於辦理中之台中港整體規劃通盤檢討及未來發展計劃。

貳、過程

一、 12 月 6 日(星期三) 搭長榮 BR12 班機由台北到洛杉磯

二、 12 月 7 日(星期四) 考察洛杉磯港

三、 12 月 8 日(星期五) 考察長堤港

四、 12 月 9 日(星期六) 搭乘聯航 UA7940 班機由洛杉磯到聖地牙哥，考察聖地牙哥港

五、 12 月 10 日(星期日) 搭乘聯航 UA2166 班機由聖地牙哥到舊金山

六、 12 月 11 日(星期一) 考察舊金山港漁人碼頭

七、 12 月 12 日(星期二) 考察蒙特利灣水族館

八、 12 月 13 日(星期三) 搭乘聯航 UA70 班機由舊金山到紐約

九、 12 月 14 日(星期四) 考察紐約／新澤西港

十、 12 月 15 日(星期五) 考察紐約／新澤西港

十一、12 月 16 日(星期六) 搭乘加航 AC321 班機由紐約到溫哥華

十二、12 月 17 日(星期日) 考察溫哥華港

十三、12 月 18 日(星期一) 搭乘長榮 BR2009 班機由溫哥華返台北

十四、12 月 19 日(星期二) 抵達台北

參、心得

一、洛杉磯港

洛杉磯港隸屬洛杉磯市政府港灣部管轄，為一地主港，由州立潮間帶信託公司經營管理，所有的開發活動皆必須與商業、科學調查與環境保護相關。洛杉磯港的發展政策是由港灣發展委員會所擬定，該委員會共有五人，由市長指定，並需經過市議會同意。

由於洛杉磯港為一自治港，因此並未接受中央補助，其收入來源主要為各項港灣服務費用如倉儲費、領航費、機械出租費、碼頭碇泊費、繫船費等，而由於其為一地主港，因此所有的碼頭設施或後線設施皆由民間投資經營，民間並擁有設施的產權。

洛杉磯港共有29個貨運碼頭中心，主要貨種包括自動化機械、貨櫃、乾貨與液散貨，平均一年的貨運量約8千萬收費噸，營收高達800億美元。其中有400萬噸貨櫃量集中在6個設施現代化的貨櫃碼頭，使洛杉機港擠身全球前十大最忙碌的港口之一。港區內的複合運輸系統提供客貨快捷便利的服務，也因此減少小客車與卡車進出港區，穿梭於港區內的交通流，使洛杉磯港的聯外運輸系統不因龐大的客貨運量而產生阻礙與延滯。

洛杉磯港的世界郵輪旅客服務中心為美國西岸最繁忙的旅客服務中心，每年的遊客旅次已逾上百萬，因此洛杉磯港務局決定再闢地20英畝供旅客服務中心擴建使用，預期將能大幅提升水岸商業與娛樂活動的發展。

依據運量預測的結果，現有的碼頭數將不足以因應21世紀的運量需求，需增建新的貨櫃中心，因此400號碼頭增建計畫於焉誕生。400號碼頭擴建計畫確保了洛杉磯港在21世紀國際化的潮流下仍能保持極佳的競爭力，該計畫預計將填築600英畝的新生地以發展貨櫃儲運中心，該貨櫃儲運中心即佔了500英畝的填地面積。

洛杉磯港29個貨運中心皆提供現代化的機械設施，完全符合使用者的需求，無論是運送各種高價值物品、民生用品或散雜貨等，皆能提供最高的裝卸效率與最完善的服務。洛杉磯港務局也以擠身21世紀世界名港自許，期望能在快速變遷的時代潮流下，繼續維護其聲望與地位。

洛杉磯港 400 號碼頭(Pier 400)

擴建計畫緣起

洛杉磯市港務局與洛杉磯港埠委員會鑑於港埠運輸需求日益增加，但可供發展的土地卻取得不易，因此以填海造陸的方式取得新生地成為必行的趨勢。400號碼頭擴建計畫為2020年的主計畫，作為洛杉磯2002年碼頭擴建計畫的一部

份，400號碼頭填地工程是個民間參與投資興建計劃將提供新貨櫃碼頭及液態散裝碼頭的發展基礎。

擴建計畫內容

此填地計畫的回填與浚挖面積約1500英畝，完工後將提供5座新的貨櫃碼頭以供第四代巴拿馬級貨櫃船(Post-Panamax Size of Container Vessels)使用及一個液態散裝貨儲存區，包括供4座巨型油輪使用的液態散裝碼頭，此400號碼頭計畫將分為二個階段發展。

原洛杉磯港的油品儲槽離洛杉磯市較近，在400號碼頭擴建完成後，則移至其液態散裝或儲存區，大大提升了都市居住安全。而由於擴建區位於較深的外港區，因此碼頭浚挖不需太深，大大減少工程經費。而貨櫃碼頭因水深增加，可引進較大噸位的貨櫃船，大幅提升碼頭裝卸量，碼頭後方的綜合運輸機也減少了轉運貨物的運送時間。

計畫位置背景

1.地理位置

400 號碼頭位於現有之洛杉磯港口內，即 SAN PEDRO 及 MIDDLE BREAKWATER 的北部 (GLENN ANDERSON水道的東方)。

2.地質條件

土壤調查顯示次表土層主要是由細沙及極細黏土材料所組成，其種類及性質各異，各個位置之分佈深度及厚度亦不同，這意味著在某些位置的軟弱層必需移走(浚挖)。浚挖所得的土方，依據當地的法規不可隨意棄置於海中，而必須棄置於指定的地點，浚挖後的地區以較好之砂土回填，一旦改良後這區的土壤不需進一步的改良。

除此問題外，較嚴重的是工址位於不同地震區的斷層之上，由於這無法以調整填土方式避免此問題，因此需在設計中加以考量，因而進行許多的模型測試，以評估結構及填地破壞之機率。

3.環境條件

此工程必需符合如"頻臨滅絕物種法令"等等的環保法規，另為了防止水污染，浚挖之廢棄土方不得丟棄於海中。其他的一些限制亦相當的嚴苛，如在碼頭區中只可使用電力式的抽沙船以防止空氣污染。

工程設計

此填地工程的細部設計是基於碼頭擴建主計畫為基礎，再以整體多元化的專業設計加以整合，包括地質、地震、浚挖、水文及環境研究。在地質技術研究中評估各種浚挖所得

的材料作為填地料源的可能性，並進行沉陷的詳細計算，在地震時對填土及斜面保護部的行為加以廣泛的分析，這研究甚至利用許多的模型進行包括離心測試及動態分析。

浚挖研究包括不同土層之複合浚挖程序，及不適用材料棄置於填土區或特定廢棄場所之規劃。

環境研究包括不同深度土層浚挖土方組成成分的分析，污染的浚挖土方需棄置於指定的地點並覆以乾淨的沙，另為彌補此填土工程可能造成之環境生態問題，在港區內特設一淺水區，以供瀕臨絕種的小燕鷗棲息。

在一個開放市場的條件下(美國限制)予以公開競標，其最後的浚挖規劃與工程設計及填土的進行，基本上是留給得標的承包商。承包商可決定最佳的執行方式，一般而言，此作業方式可提供最高價值運用，但是在此一系統下，對工程進度的控制是非常重要的，所以對品質保証之原則及規格達成一明確的共識也是很重要的。如果雙方(業主及承包商)能秉持誠信原則，確實執行工作要求及負起監督責任，則必能達成最佳工作成效。

二、長堤港(The Port of Long Beach)

長堤港地理位置概述

長堤港位於加州南部，距離洛杉磯北方約40公里，為加州第一大城－洛杉磯的衛星城市，19世紀後期開始闢墾建設，初名為威爾莫市，後才易名為長堤市。早在紐約已是國際商港之際，長堤卻猶是一尚待移民開墾的濱海城鎮。後隨著加州經濟迅速起飛，躍升為全美人口最多、最富庶的陽光之州，長堤也隨之發展，在20世紀中葉躍升為全美第一大港，該港地理位置良好，交通設施完善，且海岸線與海域皆甚為綿長遼闊，無論是貨櫃或散裝貨物，其裝卸量皆遙遙領先全美第二大港－紐約/新澤西港。

長堤港的發展過程與現況

早期長堤以產油著稱，在19世紀與產金的舊金山共同吸引大批人潮前來創業，迄今長堤的石化工業仍甚為發達，另由於濱海之故，造船事業也是當地的重要產業，美國海軍造船所正位於長堤，包括航空母艦等各類艦艇在內皆在長堤製造；此外，飛機製造業在長堤也是重要工業之一，波音公司在洛杉磯與長堤一帶設有不少工廠。工業的發達與源自洛杉磯的繁茂景象促使長堤成為全美第一大港和全球知名的大港。

長堤港係於1911年建港，現共有3,000英畝的陸域面積，水域面積則是陸域面積的數倍，可供開發的腹地兼倉儲用地也相當遼闊，遠非地狹人稠的新加坡、香港和高雄等所能比擬，無論是散裝貨或是貨櫃貨，每年皆以穩定的腳步成長。除了散裝的穀類和民生用品外，金屬、石化、油脂等工業亦是長堤港的主要貨品。

長堤港進出港的貨櫃數有一大特色，亦即進港貨櫃數遠多於出港貨櫃數，其主要的原因為美國乃消費大國，它所外銷的貨物係以價昂的工業產品為主，而進口的物資則多以民生用品為主。

長堤港的未來發展計畫

由於美國並非將航運事業視為促進國家經濟發展的重要事業，因此過去長堤港的貨櫃化裝卸運輸設施不如高雄、基隆、香港、新加坡等亞洲地區著名港口，唯自90年代起，長堤港務機構已分期訂定計畫擴建貨櫃碼頭，使近年來貨櫃裝卸運量呈直線上升的情況。

自2000年開始之連續五年，長堤港的擴建係以貨櫃中心和貨櫃碼頭為主，尤其在編號G與J的碼頭區更是投下鉅額資金以興建現代化碼頭、吊運速度與吊重限制均領先其他港埠的貨櫃起重機等設備。俟其完工後，將可使整個港埠的貨櫃化裝卸運輸體系愈趨進步完整，可望在2005年時達到每年

7,000,000TEU的目標。

愈達到上述的目標，並非單純憑藉貨櫃中心或貨櫃碼頭作業區的改善可以奏效，倉儲設施與周邊的交通連絡狀況需列入為併同構建的要項。長堤港務局特別於港區的西北隅闢建一系列的交通改善工程，使貨櫃聯結車能快速通過港區連接市區道路，而不致對於貨櫃的集運連通系統造成任何瓶頸或堆積停滯，使長堤港蛻變成為世界超級大國的首要良港。

港埠的防疫、檢查與清潔衛生的工作是確保國家生態的重要關卡，位居全美首要地位的長堤港自然必須負擔起生態維護的重責大任。1999年2月成立的「防治外侵物種顧問委員會」已擬具防治外物入侵的管理計畫，旨在防杜、控制外來物種入境，保護美國既有的環境生態。現則已在加州、紐約州、佛羅里達州和科羅拉多州展開一連串的公聽會，共同杜絕外來生物如橫行紐約的挪威種老鼠與德國種蟑螂等。

長堤遊艇港(Long Beach Marina)

長堤遊艇港擁有加州海岸線最好的地理位置，其地形為一天然內灣，外圍環繞著綿長的防波堤，港內海象條件良好，終年信風吹拂，全年任何時候皆事宜從事海上活動。遊艇使用者由道路至碼頭停船處相當便捷，不須花太多時間即可到達。由於上述因素，使長堤遊艇港成為美國國會杯、泛太平洋與奧林匹克巡迴賽的首選之地。

靠近市區的海岸線一側的遊艇碼頭區(Downtown Shoreline Marina)於1980年代啟用，由於其位於市區再開發區的中心位置，因此吸引許多企業的進駐，而迅速的發展也使該遊艇碼頭區成為長堤的首善之地。

市區遊艇碼頭區最吸引人的計畫莫過於「皇后大道海灣發展計畫」，該計畫包括3800多個泊位，其數量之龐大使長堤成為世界上規模最龐大的民營遊艇港。市區遊艇碼頭區一帶擁有多項商業與遊憩設施，舉凡遊樂園、巧克力工廠、各式商店、精品店與無數的餐廳一應俱全，沿著遊艇碼頭外圍尚有自行車道提供民眾乘騎單車徜徉其中，多樣化的活動與完善的設施機能使市區遊艇碼頭區成為老少咸宜、適合全家集體出遊的渡假勝地。

長堤遊艇港共擁有兩座加油碼頭，一座位於市區遊艇碼頭區，另一座則位於阿拉米托灣(Alamitos Bay)上。遊艇修造船廠位於阿拉米托灣，提供各項遊艇維修、清潔、美化與新建的服務，該修造船廠能提供50噸以下且不超過80公尺長的遊艇上述各項服務。

三、聖地牙哥港(Port of San Diego)

聖地牙哥港為特殊的政府機構，建於1962年，由加州州議會成立以管理聖地牙哥灣，並管轄聖地牙哥海岸沿線的公有地。該港由管理委員會負責擬定經營、管理與發展策略等事宜，每位委員皆由市議會指定，而聖地牙哥港每日的作業則由執行長負責統籌指導。

聖地牙哥港各項設施的投資者皆懷著理想，期望藉由各項活動的發展帶動地區經濟成長，提供市民一個刺激、充滿活力與維護良好的自然環境供市民工作、居住與遊憩其中，因此聖地牙哥港最主要的機能為提供各項遊憩、休閒與商業設施，以促進鄰近地區的經濟活動發展，但在經濟發展的同時，仍須兼顧聖地牙哥沿海地區珍貴的自然環境之維護。

目前聖地牙哥港營運管理單位負責督導所有的船舶活動，包括貨運碼頭中心、郵輪碼頭、聖地牙哥灣海岸溼地與商業遊憩碼頭，同時該單位也負責聖地牙哥港所有設施維修所需的財務計畫與預算規劃，至於各項水上活動如划船、娛樂漁業與港口商業活動則由設施擁有者經營。

聖地牙哥 Marriott 遊艇港的背景

聖地牙哥港位於美國西南海岸，是個優美的天然海灣，都市依磅海灣而建，而馬利特遊艇港中心則配合都市需求於

市中心臨港區逐漸發展，提供聖地牙哥居民與來自世界各地的觀光客一個充滿假日的歡愉感、悠閒、熱鬧繽紛的渡假勝地。海港中心是由一個舊漁港改建而成，是水岸親水遊憩在開發計畫的一部份。

南堤防為堤體兼海洋公園，海洋公園外側即面臨海；北堤防則為充滿復古感的煤氣街燈區，並座落著許多摩天大樓；港區東側為飯店與會議中心；西側則為海港村，由木造建築組成，裡面充滿商店與餐廳，整體氣氛呈現出一世紀以前新英格蘭和加州的維多利亞風情。位於海港村旁為港口海鮮市場，販賣當地捕獲的新鮮漁獲。

馬利特遊艇港中心已成為知名的旅遊景點，廣為當地居民與各地遊客所喜愛，所有的設施足可提供遊客闔家同遊2~3天。馬利特港中心由馬利特飯店經營，海上繫留設施可提供446艘55~60呎的遊艇繫靠，通常設施使用率介於70%~80%，此外並有供130呎以上大型遊艇靠泊的設施。

聖地牙哥的發展以馬利特遊艇港中心為主，他們充分利用老舊低使用率的漁港進行再開發，賦予其嶄新的生命，同時帶動地區發展，演變至今，已使聖地牙哥成為美國知名的渡假旅遊景點，配合周邊多樣化的住宿、餐飲、購物、遊憩等設施，以及充分的公共設施如海洋公園與復古街燈區，使馬利特遊艇港中心成為機能完整而適合全家共同前往的渡假地點，奠定了其源源不絕的客源，並帶動地區發展。

四、舊金山港(Port of San Francisco)

舊金山港發展於淘金時代，現已發展為擁有7.5英里長海岸線、佔地超過1000英畝的港口，目前舊金山港肩負促進海運貿易往來、海洋調查、漁業發展、環境維護以及提供市民休閒的重任。

舊金山港最早的發展可追溯至加州淘金狂潮初期，當時有數百艘船由世界各地前來並停泊於舊金山灣，為改善港埠設施，舊金山遂於1863年組成一個州議會以促進舊金山港的發展。直至進入20世紀時，舊金山港已迅速發展為一個國際性的港口，而臨水地區也發展為工廠、鐵路運輸站與儲貨中心；在第二次世界大戰時，舊金山港成為軍備用品的物流中心，軍隊、武器與後勤補給品皆聚集在舊金山港準備隨時面對太平洋的軍事威脅。在1950年時舊金山港更因聚集了許多造船業、修船業與相關業者而大放異彩，並成為美國西岸最重要的貨運港之一

現今舊金山港已調整發展策略，以發展深水碼頭與儲運中心為主，並提供現代化的碼頭設施供裝卸貨使用。

1968年後，舊金山港由州政府轉移至市政府手中繼續經營，同時成立一港灣委員會，繼續推動舊金山港的發展。此後舊金山港即未接受中央補助，成為一須自負財務盈虧的港。

隨著都市快速的發展，於1990年在市民提出改善水岸地區的要求，舊金山港水岸再開發計畫因此誕生。該計畫保留了大部分港口營運設施以作為未來擴充之用，但又同時鼓勵民機投資開發臨水岸邊的休憩、娛樂活動等設施。舊金山港水岸再開發計畫明確指出舊金山灣沿岸適合投資商業設施以促進公眾娛樂之處，而藉由商業設施的收益，正可補貼港灣相關事業的虧損，並支撐日益衰退的傳統港灣活動。

舊金山港務局已於2000年推動一項客輪碼頭增建計畫，完工後將取代現有的浮動式客輪碼頭，而原有的浮動式碼頭未來將僅作為緊急停靠之用，原有的地標大樓也將配合改為餐廳與商場，預期新客輪頭的完工啟用將帶來更多的外部效益。

舊金山漁人碼頭

舊金山漁人碼頭位於舊金山半島北方，緊臨舊金山灣，視野廣闊，景色優美。東向可望見海灣大橋及柏克萊區，朝西則可見到金門大橋。今日漁人碼頭觀光區，西自水上公園(AquaticPark)起，東至39號碼頭。除了具有歷史意義的漁人碼頭外，另有購物商場、公園綠地、渡輪碼頭、風帆船與遊艇碼頭、海事歷史博物館及停車場等空間規劃。

漁人碼頭地區之觀光遊憩設施多數係利用具歷史意義或老舊建築再開發而成，再加上充份發揮濱水與海灣地理位置之優

勢及商業遊憩特性，前往來舊金山的觀光客多數都會來此一遊，主要係出於它可充份地享受到碧海藍天、海鮮大餐、採購商品、電車遊覽及乘渡輪遊舊金山灣及離島地區等活動。茲就漁人碼頭主要之觀光設施之規劃說明如下：

吉拉迪利廣場(Ghirardelli Square)購物商場

吉拉迪利廣場之購物商場原為一頗具歷史的巧克力工廠，於1962～1967年間改建為購物商場。該商場為舊金山第一個將工廠改建為購物商場的先例，而且是該類型商場中最成功的典型。商場內之餐廳、精品店均具特色且品質優良，中庭設施則是設計精巧、變化豐富，相當能誘惑旅客，此外，該商場定時舉行街頭藝術表演，增加了活動的多樣性，更增添吸引遊客之魅力。

就區位而言，該商場與街道活動沒有任何的關連，可以說是一個封密而自主的空間，中庭為戶外活動的焦點。中庭內部係以高差變化來創造出空間的流動感，而以花壇和鋪面材料明確區分空間配置。中庭內噴水池為視覺焦點所在，配合四季花卉和植栽來強化景觀，四周則提供充份的座椅，以供旅客休憩。

商場外為戶外咖啡座，其利用位於舊金山灣旁的地理優勢與海灣景觀特質作為背景，相對加大了商場之商機及附加價值，亦彌補了略顯封閉之區位限制。

水上公園(Aquatic Park)

水上公園位於聯合廣場和漁人碼頭之間，公園內設有電車終點站，電車始終滿載著觀光客往來於聯合廣場和漁人碼頭之間。此一區位串聯起聯合廣場和漁人碼頭兩個據點，這裡之綠樹、草地、露天看台、散步道和沙灘則提供提供全然不同之舒逸感受。

面對著舊金山灣景水緻的露台看台，是由山坡地形高差變化演化而成。看台上經常有本地音樂家，不約而同地聚集於此，即興地演奏吸引過往的行人駐足。看台下弧形的散步道，將舊金山的公園系統串聯起來。沙灘則提供旅客戲水和日光浴。公園內的活動以靜態休閑為主。

海事歷史博物館(Maritime Museum)

海事歷史博物館將具有歷史意義之船隻及舊有碼頭合成一體，以實體呈現開放給公眾參觀。遊客從船上所陳列的傢俱等實物和照片中，可以一窺當年海事的盛況，舊金山的海事歷史就濃縮在這海事歷史博物館。此據點深具教育功能與歷史意義，開放性空間配置亦充份發揮其地理位置之優勢。

39 號漁人碼頭(Fisherman's Wharf)

舊金山市是美國西海岸之旅遊休閒及商業中心，亦是美國最吸引人之都市之一，很多旅客前來舊金山市主要目的係

為了觀光及生意。舊金山港為一天然良港，自從西班牙人1775年發現迄今已超過200年歷史，加上1840年代淘金熱之人潮，使得舊金山港快速發展為人與貨物之重要中途站。直到1940年代，舊金山灣不斷地填土開發，而都市發展繼續向海岸推進，當現代化之物流設施轉移至對岸之奧克蘭港(Oakland Harbour)後，舊金山港逐漸轉型成為商業活動之都會中心。

39號漁人碼頭於1987年開放私人投資開發，主要利用老舊之碼頭改修為商業設施之集合體，距碼頭東側二個街廓區都市型水岸商業開發是最成功之代表案例。漁人碼頭近鄰Cannery及Ghirardelli Square，一年吸引超過一仟萬觀光客前來此地，其中超過六成來自舊金山市外之人口。

漁人碼頭改修設計之特色，是利用碼頭特殊性創造出魅力之商業空間，如附圖3-8，碼頭上大多為雙層建築物，以廊道和樓梯串聯，形成在地面層及第二層遊客步行動線變化有致，空間流動且具視覺穿透。配合各式商店及娛樂設施，遂形成遊客樂於購物之空間。此外，二層建築直線之延伸，除了防制海風之配置外，建築外側廊道則提供遊客親水之空間。商店的展售與週遭景緻相互錯落，供遊客在逛街購物之餘，得以觀賞舊金山灣與遊艇碼頭之風景。地面層則有戶外咖啡座，以及街頭藝人表演的舞台。

基本上漁人碼頭據點特色係建立在該地區觀光的興盛，現今碼頭上已發展出售賣廉價紀念品及風景明信片的商店、

停車場、及汽車旅館等。海鮮餐廳的後巷直通碼頭，而正面則搭出遮棚來擺賣海鮮。充份顯現足出逛街購物餐飲之觀光商業特色。

五、紐約 / 新澤西港(Port of New York / New Jersey)

紐約/新澤西港背景簡介

紐約、新澤西港口(下稱紐、新港)位於自由神像方圓二十五英哩內。置身於北美州最龐大的消費市場，紐、新港是美國東岸的一個最主要航運樞紐。

紐、新港位置適中及有完善的貨櫃運輸系統連接著美國中西部及加拿大東部，向超過一億的消費客戶提供服務。在Port Newark/Elizabeth Marine Terminal的Express Rail內陸鐵路運輸中心，使紐、新港口的貨櫃內陸貨運系統服務更臻完善。

貨櫃運輸是紐、新港的主要運作業務，貨櫃的裝卸量為北美州第三位並排名於世界十五大貨櫃港口之內。

紐、新港是紐約、新澤西港務局轄下的一個機構。紐、新港負責管理紐約及新澤西州的港口包括有：

1.新澤西市汽車碼頭

面積：6,229,080平方呎

設有最現代化裝卸設備。以汽車裝卸為主要業務，並有專業培訓計畫以提高員工質素。

2.Brooklyn 港碼頭

面積：435,600平方呎

主要處理散裝貨物的起卸及儲倉。主要碼頭有：

(1)Red Hook Marine Terminal

(2)South Brooklyn Marine Terminal

(3)Brooklyn Marine Terminal Piers6-8

3.Port Newark/Elizabeth Marine Terminal

為北美州最繁忙的多元化貨運碼頭，以處理貨櫃為主。其他業務尚有倉庫儲存，貨櫃集散站，冷藏箱，汽車裝卸及船舶維修。

主要碼頭有：

(1)Maher Fleet Street Terminal

(2)Maher Tripoli Street Terminal

(3)Bay Avenue Terminal

(4)Maersk Line Terminal

(5)Universal Terminal

(6)Sea-Land Terminal

其他港口碼頭尚有：

(1)Global Marine Terminal

(2)Howland Hook Terminal

以上碼頭以處理貨櫃運輸為主，並設有電腦操作裝卸程序。每年經紐、新港處理之貨櫃運量遠超過二百四十七萬個標準櫃。

紐約/新澤西港港務局業務概述

紐約、新澤西港務局(下稱港務局)是一個由紐約州政府及新澤西州政府於一九二一年四月三十日經國會通過聯合組成的機構。以紐約自由神像為中心，方圓二十五英哩為界。港務局成立是旨在促進及保護紐約及新澤西港口地區內的商業業務。

目前，港務局主要是負責監管紐約州及新澤西州的陸、海、空運輸網絡；對於開拓紐約及新澤西州港口地區的商務，也有參與。港務局於歐州、亞州、非州及其他主要地區內均設有海外辦事處，協助促進紐、新兩州與世界各地的商業業務。

1.空運服務

紐、新兩州擁有美國國內最大及最繁忙的機場系統，超過100間航空公司提供定期之客貨運服務，服務網絡遍達全球。每年客運：八千六百四十萬人次每年貨運吞吐量：二百七十萬噸。主要機場列舉如下：

(1)JFK國際機場

(2)La Guardia機場

(3)Newark國際機場

2.海運碼頭

紐、新兩州的主要海運碼頭亦經港務局負責，例如：

(1)Elizabeth-Port Authority Marine

(2)Port Newark

(3)Auto Marine terminal

(4)Brooklyn/Red Hook Marine Terminal

(5)Howland Hook Marine Terminal

(6)New York City Passenger Ship Terminal

一九九八年內經紐約／新澤西港之定期航班約3,075航次，定期服務航線約80條航線，每年海運旅客約39.5萬人次，貨櫃吞吐量約187萬標準櫃，而1998年的貨運量約1,670萬噸，而免稅貿易區約2,200畝。

3.世界貿易中心

港務局亦同時擁有及經營紐約世界貿易中心一一座由七幢綜合性建築物組成的商業大廈。租戶以銀行及國際商業機構為主。世界貿易中心頂層的瞭望台及著名的世界之窗餐廳(Windows on the World)亦是紐約市的旅遊熱點。

世界貿易中心辦公樓宇簡介如下：

(1)一百一十層的建築二幢(高一千三百五十呎)

(2)四十七層的辦公室建築一幢

(3)九層建築物二幢

(4)八層美國海關大樓一幢

(5)二十二層酒店一幢

可供租賃辦公樓宇面積：一千二百萬平方呎

平均每層面積：約四萬四千平方呎

租戶總數：四百戶

每天辦工人數：四萬人次

每天訪客人數：十五萬人次

瞭望台訪客人數：每年二百萬人次

4.商業及工業發展區計畫

由紐約州／新澤西州港務局管轄的工業區有：

(1)Teleport-在Staten Island 的通訊諮詢中心

(2)新澤西州的律政專業大廈

(3)Essex郡最先進的能源還原焚化設施

(4)紐、新兩州多項沿海發展計畫

5.跨州運輸網絡

港務局亦負責操作聯系兩州間之過海隧道、橋樑、巴士客運站及輕鐵服務如：

(1)Bayonne Bridge

(2)Goethal Bridge

(3)George Washington Bridge

(4)Lincoln Tunnel

(5)Holland Tunnel

(6)Outrbridge Crossing

(7)Port Authority Bus Terminal

(8)Path commuter rail system

每年使用橋樑及海底隧道之車輛達12,142萬車次，而每年搭乘輕鐵路(PATH)的乘客達6,500萬人次，每年巴士客運則約7,040萬人次。

紐約/新澤西港投資策略分析

1.紐約/新澤西港擴建計畫背景

紐約與新澤西州的貨運量不斷成長，但現有的設備卻不足以因應未來的運量需求，隨著運量的不斷成長，預計於2010年時貨運量將成長為現況的兩倍，而至2040年時則成長為目前現況的四倍，屆時港埠相關事業的就業人口將成長至現今的兩倍，並增加300億美金的市場經濟活動。

為達成運量成長的目標，除了港埠能量有必要提升外，也需有相關的運輸系統配合發展，如公路與鐵路。此外，碼頭面積也需相對的增加，預估約於2040年約需有1,400英畝的碼頭作業面積，現有的設施顯然已無法因應未來需求，因此

需進行投資計畫以確保紐約/新澤西港未來的競爭力。

2.紐約/新澤西港擴建區位選擇

紐約/新澤西港務局為擴建現有設施與闢建新碼頭，必須尋找出適合地點完成上述工程，所有的候選區位皆經由一套評估準則加以分析，其中考量到各候選區位未來發展的機會與限制，各準則列舉如下:

(1)地區經濟效益

(2)財務籌措難易度

(3)水深

(4)與內陸地區交通運輸可及性

(5)環境衝擊

(6)獲得開發許可難易度

(7)工期

3.紐約/新澤西港擴建計畫投資策略之擬定

研擬投資策略需考量幾個重要的因素，如：

(1)決定港埠能量是否充足

決定一個港口是否需增加額外的碼頭，關鍵在於航道水深。紐約/新澤西港若能提供更深的航道與碼頭，則能吸引吃水深大的貨櫃船靠泊，藉以提高貨運量。當貨物運量增加，相對的也增加了港埠相關事業的就業機會，並帶動地區經濟成長。

(2)相關運輸系統之建立

海運中心的發展不能僅投資港埠設施，也須有運輸系統配套發展，包括鐵路與公路運輸系統，不僅只考量現有的運輸設施，也需一併規劃未來所需的運輸設施，因此，紐約/新澤西港務局必須與紐約州與新澤西州的運輸部門合作協調，以建立完善的聯外運輸系統。

(3)環境責任

港灣開發牽涉許多海洋環境保護問題，當碼頭數不足時，往往需填海以取得新生地，為減少對環境的破壞，通常利用航道浚挖的淤泥回填碼頭。

由於紐約/新澤西港務局體認到擴建碼頭計畫將對於海洋生態造成衝擊，因此他們做成了一套減輕環境衝擊影響的發展策略，首先是提高現有設施的裝卸能量，不足時再以現有土地擴建碼頭，若仍無法滿足運量需求，最後才選擇回填新生地以增建碼頭。

為彌補回填新生地對海洋造成的衝擊，必須相對的提出一套完善的海洋環境改善計畫，如有計畫的增加溼地魚種與野生動植物的數量，以維護環境生態之和諧。

貨運量的增加將帶來更多的聯外運輸問題，在龐大的運量需求下須建立完善的聯外運輸系統，以避免對環境造成額外的衝擊。

(4)區域經濟衝擊

港埠發展與地區經濟有密不可分的關係，藉由港埠各項服務機能的擴大，可刺激相關產業的成長，但為達成營收成長的目的，相關的服務設施必須充足以滿足裝卸運輸需求。

(5)發展親水遊憩機能

近年來的研究皆意識到一個新潮流，亦即市民對親水的需求應由港口予以滿足。親近海洋原為人類的天性，隨著經濟逐步發展，休閒意識漸漸抬頭，港灣的功能也應重新予以定位，由世界諸多港灣再開發成功的案例，可彰顯親水遊憩機能對於港口發展的重要性，人們渴望親近海洋，而港口正提供了一個適當的地點讓人們有機會接近水岸，因此港口發展策略應充分考量此一時代的潮流。

(6)投資成本與效益

一個關鍵的投資哲學是:「有未來運量需求再投資新碼頭」，依據上述的投資原則，運量預測即成為相當關鍵的要素，一般港務管理機關約每隔5年進行運量預測一次，在目標年度逼近時，應及早重新檢視設施現況與下五年運量需求，以確保港口維持足夠的競爭力。

計算投資成本時，應該包括各項軟硬體設施的投資費用、浚挖費用、回填費用以及環境保護費用。

紐約/新澤西港務局於決策的過程中，莫不以「擴大現有設施規模之極至」與「由既存的水岸環境追求利益」為目標，因此他們採用航道浚挖的淤泥回填新生地。在決定投資策略以前，紐約/新澤西港務局廣泛徵求投資者的意見，包括政府官員與各相關機構、民意團體、環保團體、都市規劃師、商人與港埠相關事業機構，經由匯整各方意見後，再提出整體港埠投資策略，以確保投資之正確性。

六、溫哥華港(Port of Vancouver)

溫哥華港是由26個貨運營運中心與其他多功能碼頭所組成，提供各類貨物與旅客完善的服務。溫哥華港並未有水深限制，能提供超巴拿馬級的船舶靠泊，並且也能提供北美西海岸各港中最便利的鐵路運輸服務。

在所有的碼頭中，17個大宗散貨營運中心的年裝卸量佔全年運量的80%，其中的貨種以煤炭、硫磺、草鹼、小麥、石油製品與木屑為主。另外9個一般散雜貨營運中心裝卸的主要貨種包括木製品、三夾板、紙漿與新聞用紙，主要貨種運量佔一般散雜貨總運量的96%，並佔全港總運量的6%，一般散雜貨碼頭也包括專用碼頭。

溫哥華港共有三個貨櫃營運中心，其中兩個位於內港區，一個位於外港區，位於外港區的貨櫃營運中心於1997年啟用，每年裝卸量以超過120萬TEU的速度倍增。

溫哥華港的郵輪碼頭為溫哥華－阿拉斯加航線郵輪的船籍港，每年的旅客數超過1百萬人，目前郵輪碼頭共有兩座，一座為加拿大中心(Canada Place)，該中心同時具備碼頭、旅客候船設施、飯店、國際會議廳、商業展示中心、劇場、商店與各項休憩設施；另一座為柏倫提碼頭。

加拿大中心(Canada Place Convention Center)

加拿大中心背景簡介

加拿大中心位於溫哥華港旁，為一外觀饒富科技意象、現代化的大樓，由於加拿大中心的成立，使市民的活動範圍由市區延伸到港區，北美各海港城市皆有一共同的特點，鐵路在市區縱橫交錯，但發展至港區前即已是終站，鐵路阻斷了市民與港口間便利的連結，為了重新建立起市民與水岸間的親近感，也為了提供遊輪靠泊所需之碼頭，因此必須建立一兼具商業、旅運、娛樂等複合功能的活動中心，同時改善其周邊的環境，並鋪設濱海散步道。

濱海散步道的設計對於加拿大中心具有舉足輕重的影響，創造出悠閒、舒適的散步道可吸引市區活動延伸至港區，並使郵輪搭乘者在往返郵輪與加拿大中心的途中能感到輕鬆而愉悅，藉此吸引遊憩人潮，創造繽紛歡樂的環境。

加拿大中心功能概述

加拿大中心現已成為溫哥華的地標，上層為會議中心，在會議中心下方則是有505個房間的飯店、旅運服務中心、巴士站與770個車位的停車場，而前方臨海帆船造型的建物則為世貿展示中心與劇院，在劇院前方凸出海上的廣場則是露天劇場。

加拿大中心以其細緻繁複的帆船造型展示中心聞名於北美，其周邊濱海步道的悠閒環境已成功與市區散步道結合，吸引都市活動由市區蔓延至濱海地區，並拉近市民與海洋的距離，使加拿大中心成為市民日常休閒的最佳去處之一。

七、蒙特利灣水族館(Monterey Bay Aquarium)

蒙特利灣水族館簡介

蒙特利灣水族館位於北加州海岸，為美國相當知名且經營成功的水族館，並曾獲得多項大獎，該館最大的特徵為整體創新的設計理念，其中最特別之處為該水族館所展示的內容皆以棲息在蒙特利灣與鄰近海岸線的海洋生態為主，如此強烈的展示焦點使其成為獨樹一格的水族館。此外，一般水族館的參觀方式只有一種，亦即從頭瀏覽到尾，然而蒙特利灣水族館卻不採用單一遊覽的方式，而是提供更大的彈性空間供不同需求的旅客參觀。旅客可以選擇參加館內演講以瞭解當地的海洋生態，或是選擇某一主題盡情瀏覽，當然更可從頭到尾參觀每一展示主題。

蒙特利灣水族館設施內容

蒙特利灣水族館為四層樓的建物，樓地板面積為1,200m^2，主體的一部份為古老的沙丁魚罐頭工廠改建而成，新建的主體與舊罐頭工廠整合相當協調，包括倉庫、鍋爐室、幫浦室等，新建的館體與周邊原有建物相調和，其設計理念主要有兩項：(1)與周遭環境高度整合(2)保有現代化水族館所應具備的機能。

蒙特利灣水族館保留了相當大的展示彈性空間，並巧妙

的結合周邊環境與建物主體共構為一保有自然風格的展示館，將海灣的一部份規劃入展示的空間之中，利用自然的潮汐力量清理生物池，各類展示的海洋生物也真實的活在大海中。

蒙特利灣水族館嘗試著以各類海洋生物其原有的生活型態與環境展示在遊客眼前。館方並以玻璃纖維做成的岩石放入海水浸泡數年後，待各類海藻植生已附著其上，再用於生物池中以模擬海中岩石。

肆、建議

一、開放民間參與投資港埠興建營運方式有下列幾種方式：

1.由民間機構投資新建並為營運；營運期間屆滿後，移轉該建設之所有權予政府。(BOT)

2.由民間機構投資新建完成後，政府無償取得所有權，並委託該民間機構營運；營運期間屆滿後，營運權歸還政府。(BTO)

3.由民間機構投資新建完成後，政府一次或分期給付建設經費以取得所有權，並委託該民間機構營運；營運期間屆滿後，營運權歸還政府。(BTO)

4.由政府委託民間機構，或由民間機構向政府租賃現有設施，予以擴建、整建後並為營運；營運期間屆滿後，營運權歸還政府。(ROT)

5.由政府投資新建完成後，委託民間機構營運；營運期間屆滿後，營運權歸還政府。(OT)

6.為配合國家政策，由民間機構投資新建，擁有所有權，並自為營運或委託第三人營運。(BOO)

7.其他經主管機關核定之方式。

本次考察美加各港後，發現美加政府在港埠設施開放民營的過程中，在法規上給予相當大的彈性，因此港務局與民間企業可依據實際需求簽訂契約，不致因受限於法規而阻礙民營化的腳步。

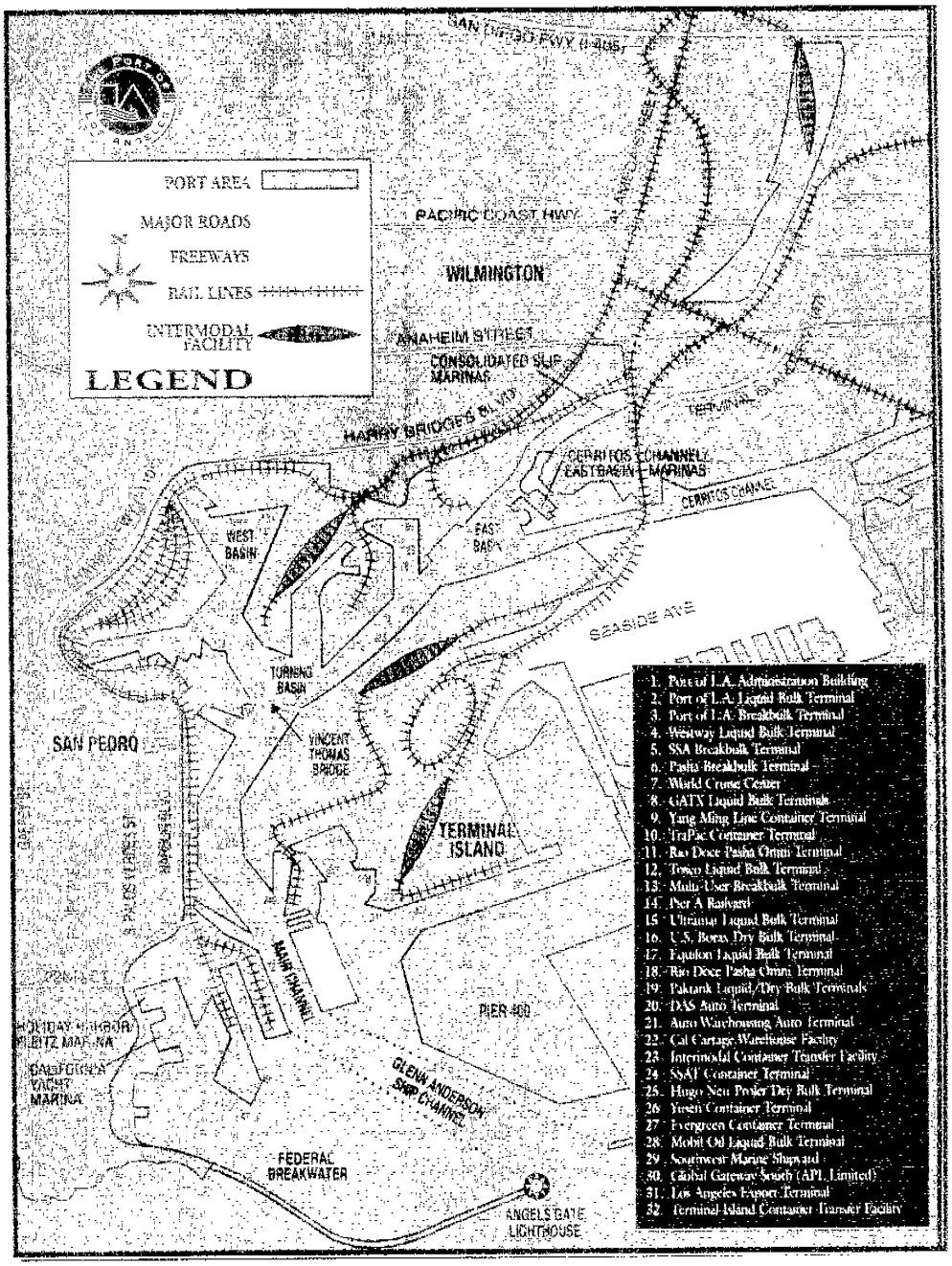
二、台中港港口北側淤沙區，在港務局二十餘年來細心的整治已蔚然成漂亮的防風林，除成功的扮演屏障港灣的角色外，吸引前來棲息的鳥類與鄰近豐富蟹甲的潮間帶，形成檜炙人口的遊憩景點，港區整體規劃特將本區劃設為遊憩專業區，並積極規劃藉助民間財力投資開發，本次考察聖地牙哥、長堤、洛杉磯的遊艇港、舊金山的漁人碼頭、蒙特利灣水族館，體察其致勝之關鍵在於各項活動與機能設施能充分整合，塑造出愉快的渡假感，足夠吸引旅客一再造訪是奠定成功發展的基礎，頗值學習與效法。

三、台中港中泊渠底部尚未開發的19B、20A、20B碼頭區，如能配合19A客運碼頭與旅客服務中心的開放，適時規劃為觀光遊憩船碼頭，並將後線及緊鄰的港口作業服務區、旅客服務中心廣場作一整體規劃，鼓勵民間參與投資興建營運，將可形成台中港另一個親水遊憩空間，此次考察所見加拿大溫哥華港—加拿大中心，北溫哥華渡輪中心，聖地牙哥郵輪碼頭(Cruise Ship terminal)、觀光渡輪碼頭(Broadway Pier)、航海博物館(Maritime musaum)、洛杉磯世界客輪中心遊憩觀光碼頭，航海博物館等成功的經驗可作為借鏡。

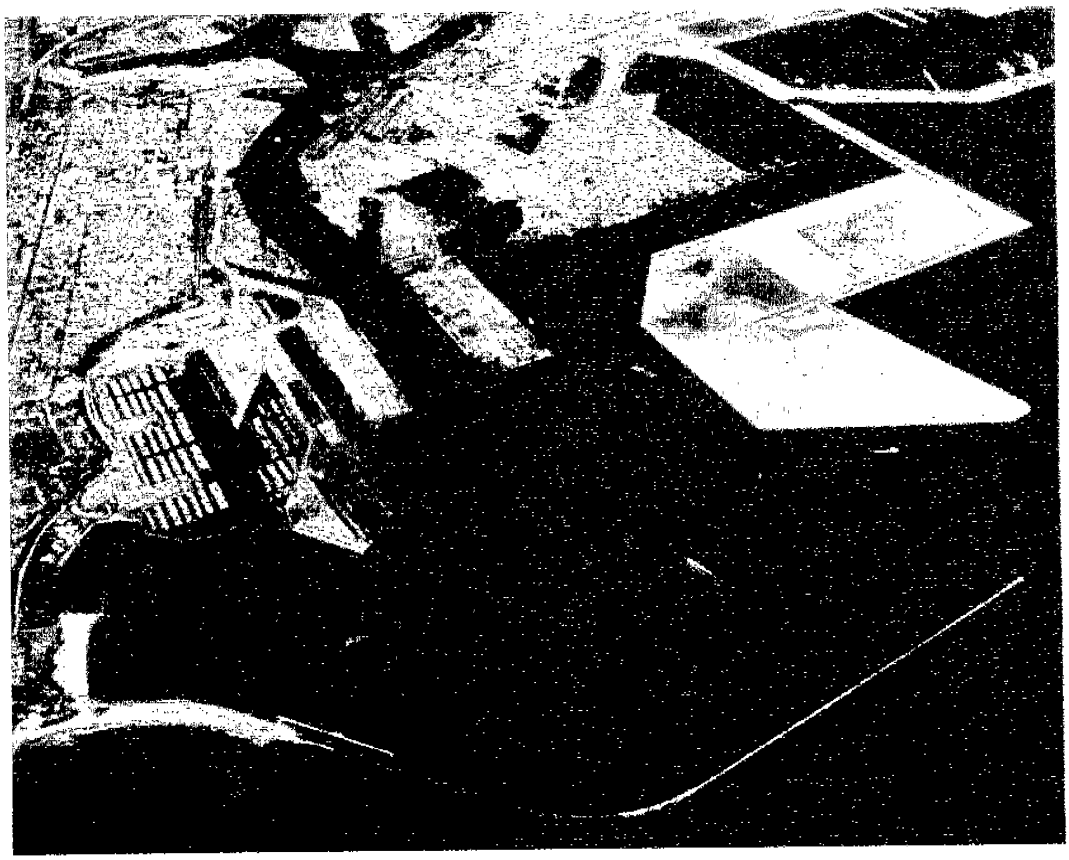
四、親近海洋原為人類的天性，隨著經濟發展休閒意識抬頭，市民對親水的需求逐漸轉向港口予以滿足，港灣功能重予定位，適當的提供親水空間容入遊憩、觀光、休閒渡假機能，由世界諸多港灣再開發成功案例可證，未來港口發展策略應充分考量此一時代潮流。

附　錄

一、洛杉磯港

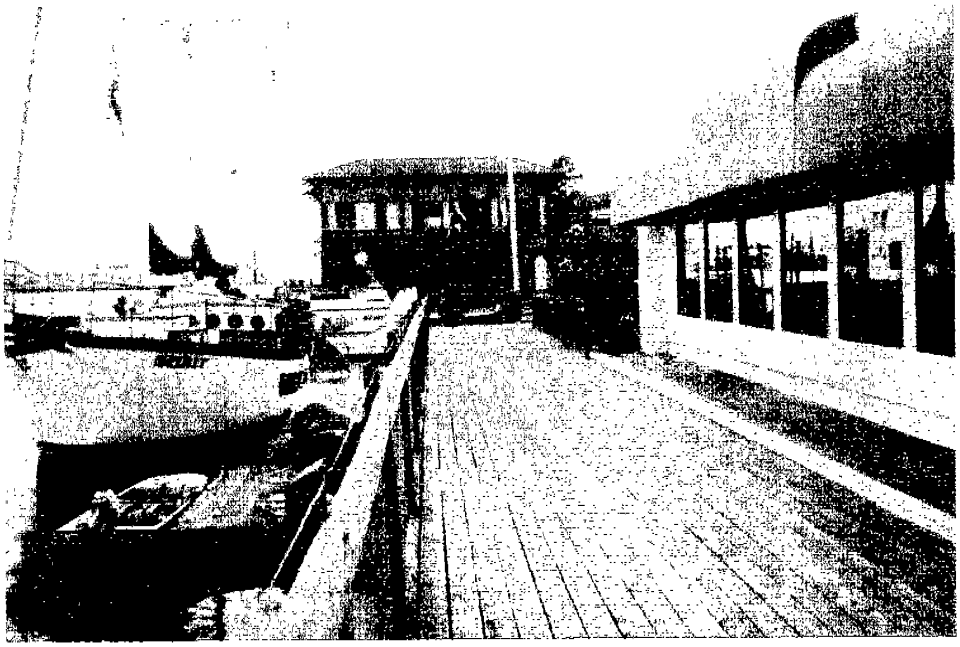

PORT AREA
MAJOR ROADS
FREEWAYS
RAIL LINES
INTERMODAL FACILITY
LEGEND
PACIFIC COAST HWY
WILMINGTON
ANAHEIM STREET
CONSOLIDATED SLIP MARINAS
HARRY BRIDGES BLVD
CERRITOS CHANNEL EASTBASIN - MARINAS
CERRITOS CHANNEL
WEST BASIN
EAST BASIN
SEASIDE AVE
TURNING BASIN
SAN PEDRO
VINCENT THOMAS BRIDGE
TERMINAL ISLAND
MAIN CHANNEL
PIER 400
GLENNA ANDERSON SHIP CHANNEL
HOLIDAY HARBOR
CALIFORNIA YACHT MARINA
FEDERAL BREAKWATER
ANGELS GATE LIGHTHOUSE
1. Port of L.A. Administration Building
2. Port of L.A. Liquid Bulk Terminal
3. Port of L.A. Breakbulk Terminal
4. Westway Liquid Bulk Terminal
5. SSA Breakbulk Terminal
6. Pasha Breakbulk Terminal
7. World Cruise Center
8. GATX Liquid Bulk Terminals
9. Yang Ming Line Container Terminal
10. TraPac Container Terminal
11. Rio Doce Pasha Omni Terminal
12. Tesco Liquid Bulk Terminal
13. Multi-User Breakbulk Terminal
14. Pier A Railyard
15. Ultramar Liquid Bulk Terminal
16. U.S. Borax Dry Bulk Terminal
17. Equilon Liquid Bulk Terminal
18. Rio Doce Pasha Omni Terminal
19. Pakrank Liquid/Dry Bulk Terminals
20. DAS Auto Terminal
21. Auto Warehousing Auto Terminal
22. Cal Cartage Warehouse Facility
23. Intermodal Container Transfer Facility
24. SSAT Container Terminal
25. Hugo Neu Proler Dry Bulk Terminal
26. Yusen Container Terminal
27. Evergreen Container Terminal
28. Mobil Oil Liquid Bulk Terminal
29. Southwest Marine Shipyard
30. Global Gateway South (APL Limited)
31. Los Angeles Export Terminal
32. Terminal Island Container Transfer Facility

洛杉磯港

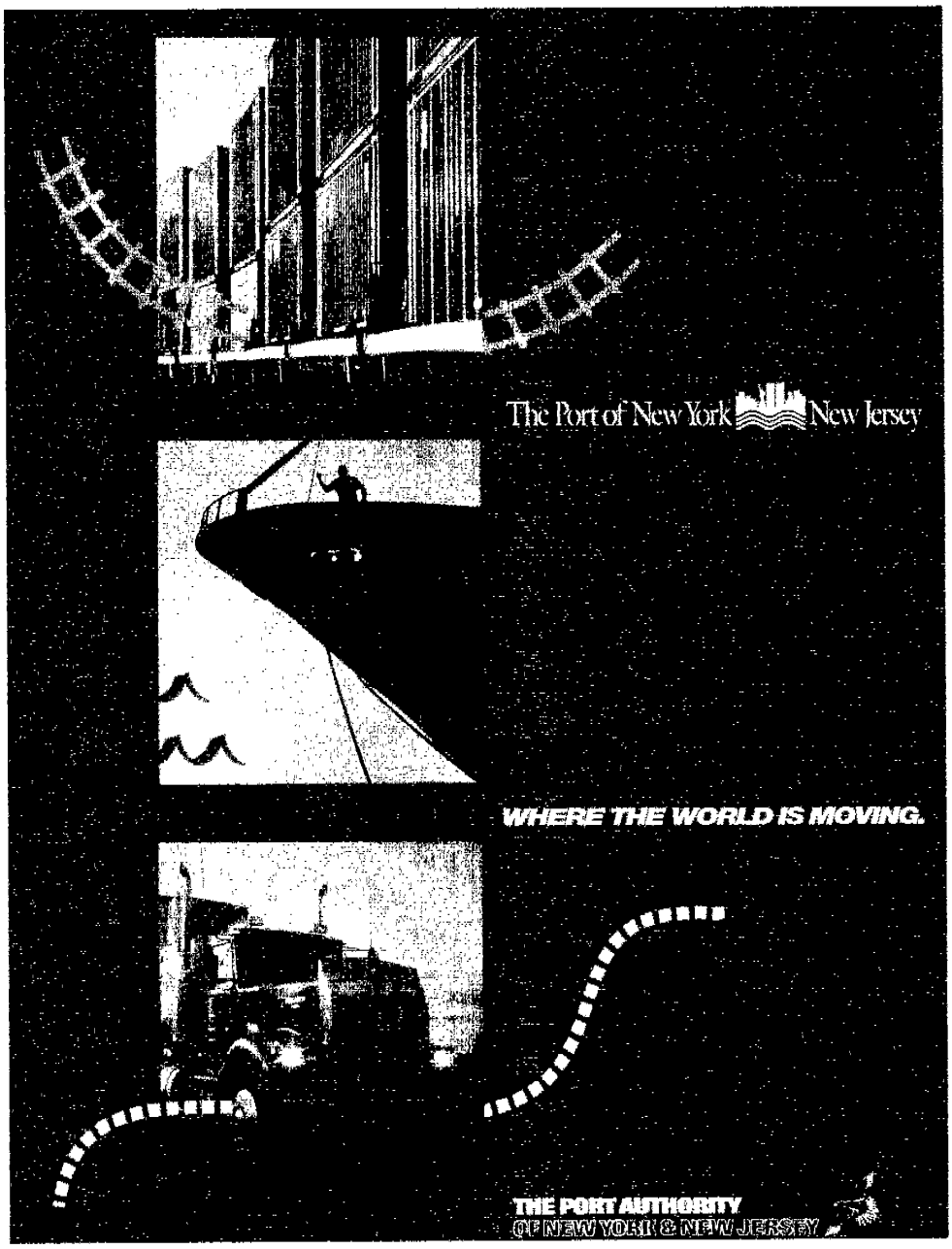


洛杉磯 400 號碼頭

洛杉磯遊艇碼頭區



洛杉磯遊艇碼頭


The Port of New York New Jersey
WHERE THE WORLD IS MOVING.
THE PORT AUTHORITY
OF NEW YORK & NEW JERSEY

AUTOMOBILE TERMINALS

Numbers 195-199

Distribution & Auto Service, Inc. (DAS)

Operated by: DAS (at the Port of Los Angeles since 1969)

Contact: Robert L. Miller, Director of Marketing, DAS, (310) 847-4425

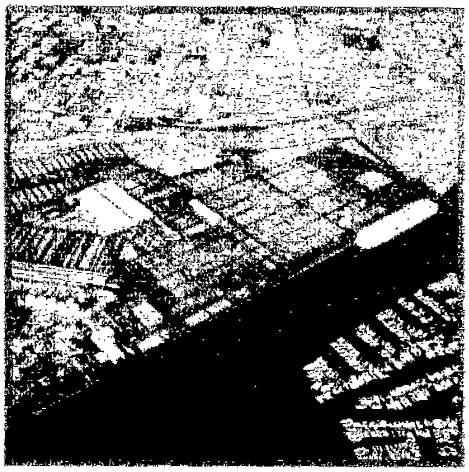
Total land area: 129 acres (52 hectares)

Building size: 153,000 square feet (14,214 square meters)

Total berth length: 2267 feet (691 meters)

Vehicle manufacturers served: Daewoo Motor America; Infiniti Division of Nissan North America, Inc.; Mercedes-Benz of North America, Inc.; Nissan Diesel America, Inc.; Nissan North America, Inc.; and World Logistics Service (USA), Inc.

Services offered: Vehicle processing, logistics and export



Number 200A

Auto Warehousing Co.

Operated by: Auto Warehousing Co.

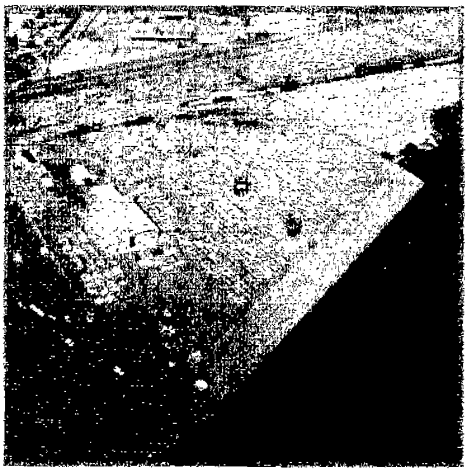
Contact: Steve Rodriguez, Terminal Manager, Auto Warehousing Co., (310) 522-9555

Total land area: 19 acres (eight hectares)

Total berth length: 730 feet (224 meters)

Vehicle manufacturers served: Hyundai Motor America

Services offered: Complete automobile processing



INTERMODAL NETWORK

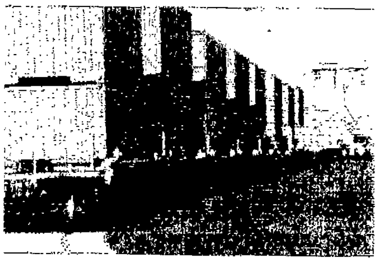
Each year, more than 80 steamship lines make nearly 4,500 regularly scheduled calls at the Port of New York & New Jersey. From this exceptional "hub port," cargoes speed easily from ship to final destination via a comprehensive intermodal system.

By Road

Thousands of trucking companies serve the Port of New York & New Jersey, providing quality handling and responsive service from pick-up through delivery. The Port's proximity to the most extensive interstate highway network in the region ensures that cargo will be moved on and off terminals and to/from distribution centers quickly and efficiently.

Expediting services such as ACES, (Automated Cargo Expediting System), for electronic cargo management and communications, and Sea Link, a truck driver identification system that speeds processing, are paving the way for paperless cargo movement at the Port.

Thousands of trucking companies ensure quick and responsive handling of cargo from pickup through delivery.



The Port of NY NJ offers more double-stack trains than all other East Coast ports combined.

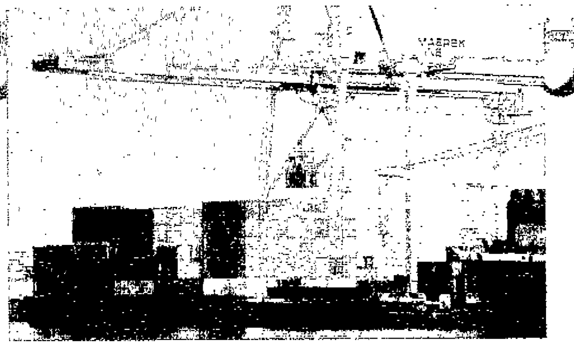
By Rail

With 14 intermodal rail transfer terminals, including both on-dock and near-dock facilities, the Port's exceptional rail service specializes in vast capacity and fast turnaround. We offer more double-stack trains — the quickest, most cost-effective method of long-distance overland shipping — than all the other East Coast ports combined.

ExpressRail, our expanded on-dock rail terminal, specializes in the handling, transfer and shipping of containers via double-stack trains to the Midwest and Canada. Designed to accommodate expansion, ExpressRail can grow to meet the changing needs of its customers.

From this exceptional "hub port," cargoes speed easily from ship to final destination via a comprehensive intermodal system.

Reactivation of the Staten Island North Shore Railway, which runs directly into Howland Hook, expands the Port's on-dock, double-stack rail handling capability even further. It also provides the marine terminal with direct rail connections to important inland markets in the Midwest, Canada, and the U.S. West Coast.



[illegible]

By Air

The Port Authority of New York & New Jersey operates three major airports — Newark International, John F Kennedy International and LaGuardia — which together handle over 20% of all international air cargo shipments in the U.S., more than any other airport system in the world. Additionally, the airports' proximity to our marine terminals makes them ideally positioned for establishing sea/air shipping links.

Newark Airport serves as the major overnight express hub for the Eastern U.S., while JFK is the leading air cargo gateway for automated customs services. LaGuardia, the region's largest domestic airport, offers easy access to New York City's business and financial centers, making it the ideal origin and destination airport for time sensitive courier-type materials.

By Water

The Port is currently served by two major feeder barge operators, connecting the Port to markets as far north as Portland, Maine, and as far south as Norfolk, Virginia. Combined, they move more than 150,000 containers up and down the East Coast annually. Both dry and reefer containers can be accommodated. Trans-harbor lift on/lift off container service is also provided between Brooklyn's Red Hook Container Terminal and the Elizabeth – Port Authority Marine Terminal.

Innovative programs and services further enhance the competitive advantages of intermodalism. Recognizing the economic benefits of neutral chassis pools, several terminal operators and leasing companies have established such chassis resources at Port Newark/Elizabeth, as well as in Brooklyn.

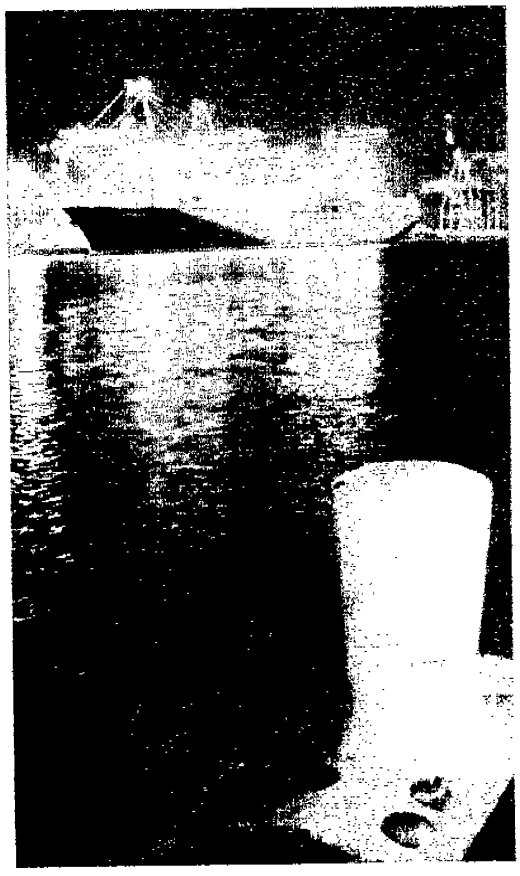
[illegible] to the Midwest, Canada and New England

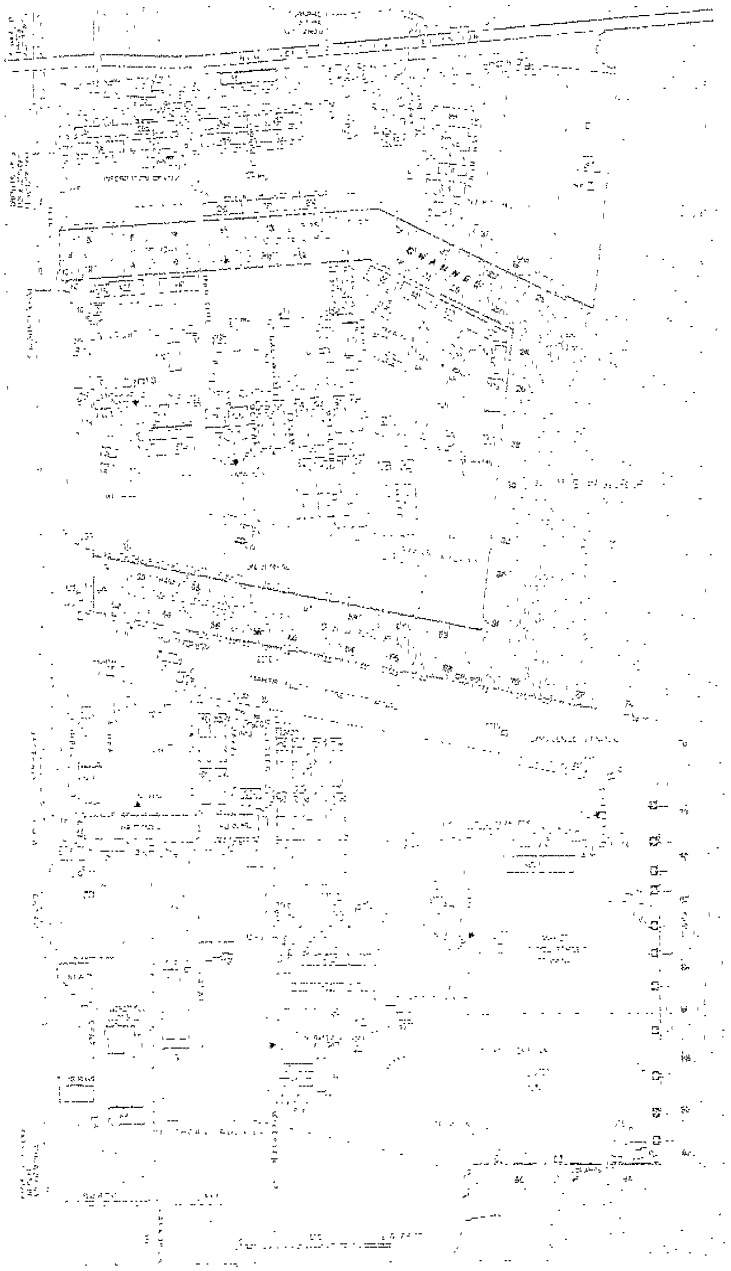
Port Newark/Elizabeth Marine Terminal

The Port Newark/Elizabeth Marine Terminal is the most active container port on the East Coast, handling more than 12 million long tons of everything from cocoa to chemicals every year.

Additionally, with Foreign-Trade Zone 49 designation, tenants located here can take advantage of all Zone benefits, including the deferral, reduction and possible elimination of U.S. Customs duties on imported goods.

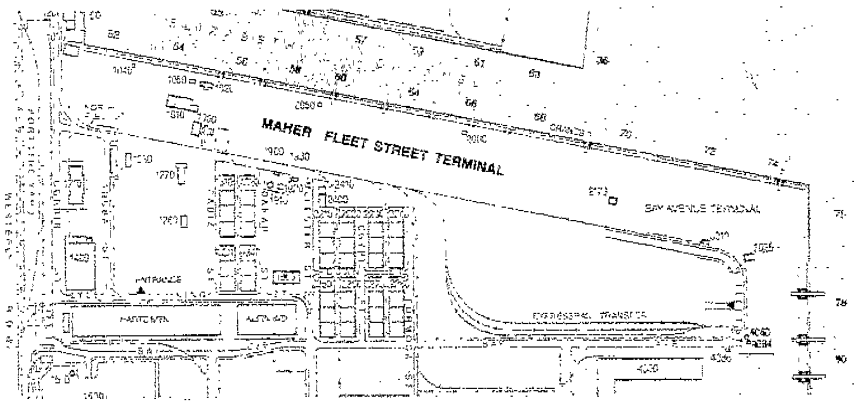
The most active container port on the East Coast.





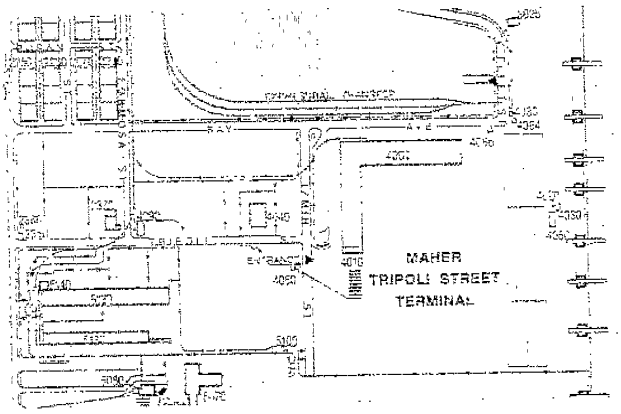
MAHER FLEET STREET TERMINAL

Address	1020 North Fleet Street Elizabeth, NJ 07201 (908) 527-8200 (908) 526-8884 FAX	
Entrance Gates	Lyle King Street	
Primary Cargo Type	Containers, ro/ro	
Terminal Area	195 acres / 79 hectares	
Length of Ship Berth	4200 feet / 1280 meters	
Depth at Dock	35 feet MLW / 11 meters MLW	
Container Cranes	2 Star 30-ton, 5 Paceco, 50 ton	
Crane Capabilities	Star	Paceco
Height	72 feet	100 feet
Outreach	113 feet	135 feet
Tonnage	50 LT	50 LT
Equipment	Straddle carriers Yard hustlers Stackers, 30-ton, 15-ton and 5-ton Toploaders 40-ton Empty handlers, 5-high Flat beds Mafis 20/40 360 chassis in vertical stacking	
Intermodal	On-dock rail, ExpressRail Daily service to Montreal, Toronto, and U.S. Midwest destinations	
Chassis Pool	Chassis storage system Trucking services	
Maintenance and Repair	On-site container and chassis repair Roadability inspection On-site reefer maintenance and repair 200 reefer plug slots	
Computer Access	On-line VAX Cluster integrated with terminal management systems and directly to steamship accounts	

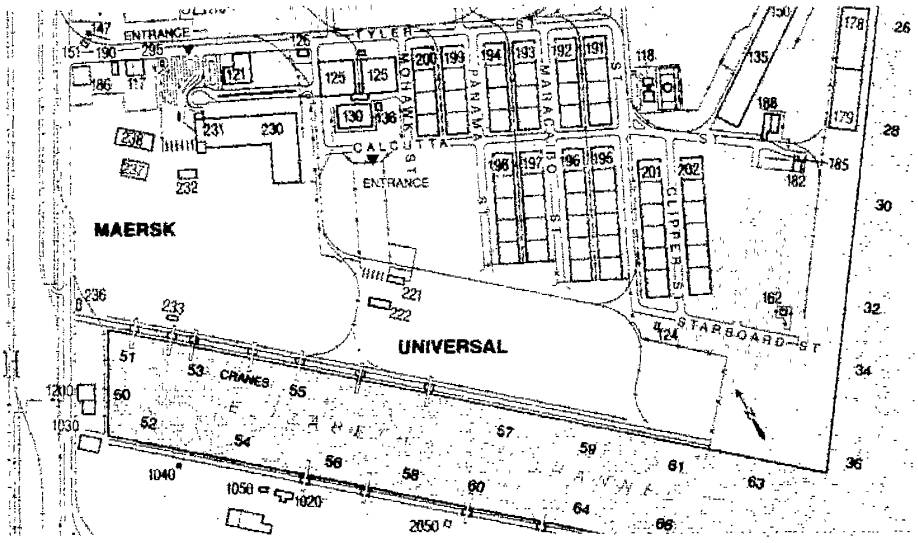


MAHER TRIPOLI STREET TERMINAL

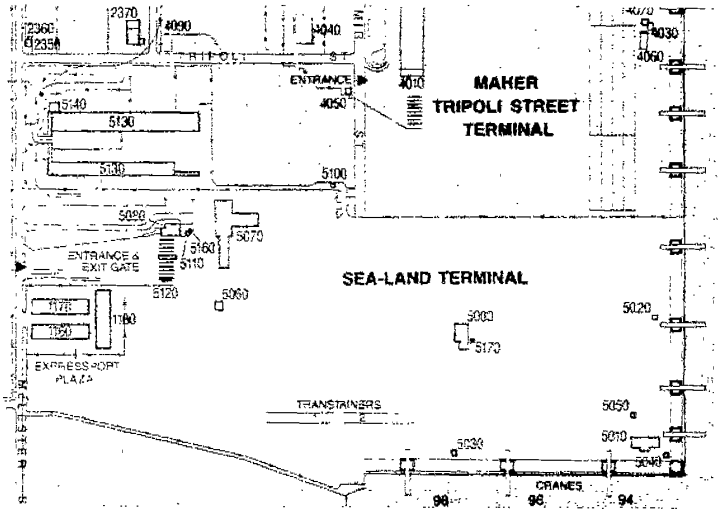
Address	4010 Tomlr Street Elizabeth, NJ 0720" (908) 527-9400 (908) 558-1379 FAX			
Entrance Gates	Tripoli Street			
Primary Cargo Type	Containers, ro/ro			
Terminal Area	243 acres / 98 hectares			
Length of Ship Berth	3150 feet / 960 meters			
Depth at Dock	98 feet MLW / 12 meters MLW			
Container Cranes	3 Morris, 30-ton 5 Paceco, 40-ton 1 Gantron, 40-ton			
Crane Capabilities		Morris	Paceco	Gantron
	Height	90 feet	81 feet	82 feet
	Outreach	125 feet	115 feet	116 feet
	Tonnage	30 LT	40 LT	40 LT
Equipment	Yard Hustlers Stackers 30-ton 15-ton and 5-ton Toploaders, 40-ton Forklifts, 4-ton and 2.5-ton Empty Handlers 5-high Flat beds Mafis - 20/40 Translifters - 30-ton 1280 chassis in vertical stacking			
Intermodal	Raw 5-feet access to ExpressRail. Daily on-dock service to Montreal, Toronto, and Midwest destinations			
Maintenance and Repair	On-site container and chassis repair Roadability inspection On-site reefer line maintenance and repair 200 reefer plug slots			
Chassis Pool	Chassis storage system; Trucking services			
Computer Access	On-line VAX Gluston integrated with terminal management systems and directly to steamship accounts			



MAERSK LINE / UNIVERSAL TERMINAL	
Address	231 Tyler Street Port Newark, NJ 07114 (201) 589-6200 (201) 589-6214 FAX
Entrance Gates	Tyler Street and Calcutta Street
Primary Cargo Type	Containers, ro/ro
Terminal Area	153 acres / 62 hectares
Length of Ship Berth	3822 feet / 1165 meters
Depth at Dock	35-40 feet MLW / 11-12 meters MLW
Container Cranes	3 Paceco, 50-ton 5 Paceco, 40-ton
Crane Capabilities Height	100 feet
Outreach	150 feet
Breakbulk Tonnage	58 LT
Equipment	Stackers, 15-ton and 28-ton Topicaders, 50-ton, 35-ton and 13-ton Hi-los, 5-ton to 7-ton
Stuffing & Stripping Facilities	175,000 square feet
Intermodal	Adjacent to ExpressRail Wheeled and stacked Chassis pool
Maintenance and Repair	12-bay roadability garage 36-bay maintenance and repair garage 12-bay reefer shop 421 reefer plug slots
Computer Access	IBM on-line system



SEA-LAND TERMINAL	
Address	5030 McLester Street Elizabeth, NJ 07114 (908) 558-8000 (908) 558-6481 FAX
Entrance Gates	McLester Street
Primary Cargo Type	Containers
Terminal Area	266 acres / 108 hectares
Length of Ship Berth	4519 feet / 1377 meters
Depth at Dock	40 feet MLW / 12 meters MLW
Container Cranes	6 Paceco, 30-ton; 1 Mitsubishi, 46-ton
Crane Capabilities	Paceco / Mitsubishi Height 81 feet / 88 feet Outreach 115 feet / 126 feet Tonnage 30 LT / 40 LT
Equipment	Toploaders, 30-ton Forklifts, 2.5-ton to 25-ton Transtainers, 40-ton
Stuffing & Stripping Facilities	308,000 square feet
Intermodal	Adjacent to ExpressRail with daily double-stack trains to U.S. Midwest & Canada Trucking services CSXI stack train service to Chicago & West Coast provided at Little Ferry Yard 468 reefer plug slots
Maintenance and Repair	Complete on-site maintenance facility Roadability inspection
Computer Access	Computer-integrated terminal operation, with real-time access to Sea-Land's international computer network

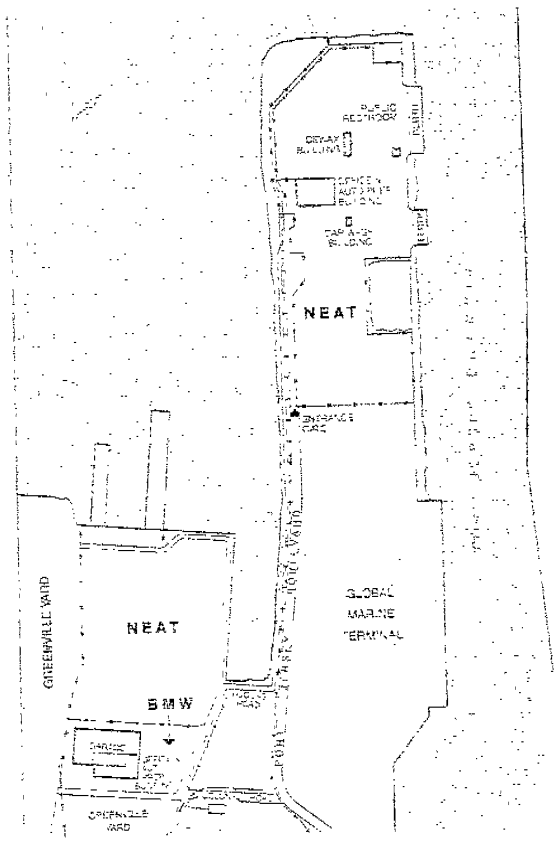


VEHICLE TERMINALS

With five individual vehicle processors offering an extensive range of services on over 430 acres, the Port of New York & New Jersey continues to be one of the dominant auto handling ports in the U.S.

Vehicle processors can cover everything from simple storage and shipping logistics to sophisticated inspections, modifications and assembly operations for quality assurance and regulatory compliance programs — all while offering immediate access to the most lucrative automobile market in America. In addition there is:

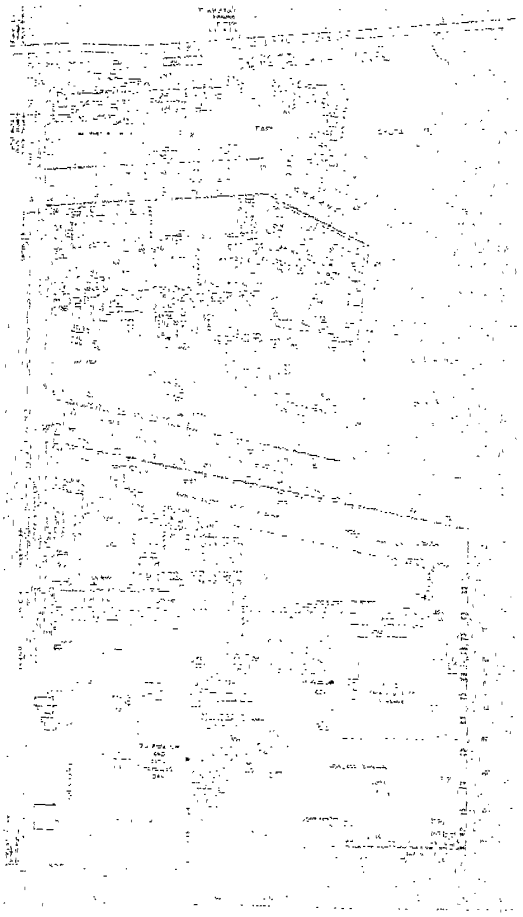
- Improved rail access to our facilities with connections to and from the entire U.S. and Canada, including new state-of-the art rail terminals at Port Jersey/Greenville and Port Newark/Elizabeth.
- A comprehensive and unique Quality Vehicle Handling Program to assure vehicles shipped through the Port receive the utmost care.
- Foreign-Trade Zone benefits for all processing facilities, which can reduce, defer or eliminate U.S. Customs duties.
- Intensive security measures that have created a remarkably incident-free operation.
- The East Coast's only immediate access to Conrail/Norfolk Southern's Triple Crown AutoRailer network at the Portside Yard, offering unparalleled flexibility in vehicle distribution throughout North America.



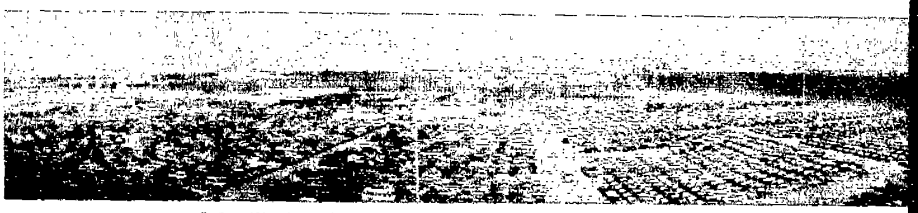
AUTO MARINE TERMINAL

AUTO MARINE TERMINAL	
Acreage	130 acres / 53 hectares
Number of Berths	2
Berth Space	1,900 feet / 549 meters
Depth at Dock	32 feet MLW / 10 meters MLW
Intermodal	Direct rail
Vehicle Processors	
BMW of North America Entrance Gate	15 acres / 6 hectares Colony Road
Northeast AutoMarine Terminal (N.E.A.T.) Entrance Gate	115 acres / 47 hectares Port Jersey Blvd.

PORT NEWARK-ELIZABETH VEHICLE FACILITIES	
Acreage	304 acres / 123 hectares
Number of Berths	6
Berth Space	4,300 feet / 1311 meters
Depth at Docks	35-40 feet MLW / 11-12 meters MLW
Intermodal	Direct rail
Vehicle Processors	
Distribution & Auto Services Inc. (DAS) Entrance Gate	101 acres / 41 hectares Polaris St.
FAPS Inc. Entrance Gates	118 acres / 48 hectares Craneway & Port Sts.; Kellogg Street
Toyota Motor Sales U.S.A. Inc. Entrance Gates	90 acres, 36 hectares Port St.



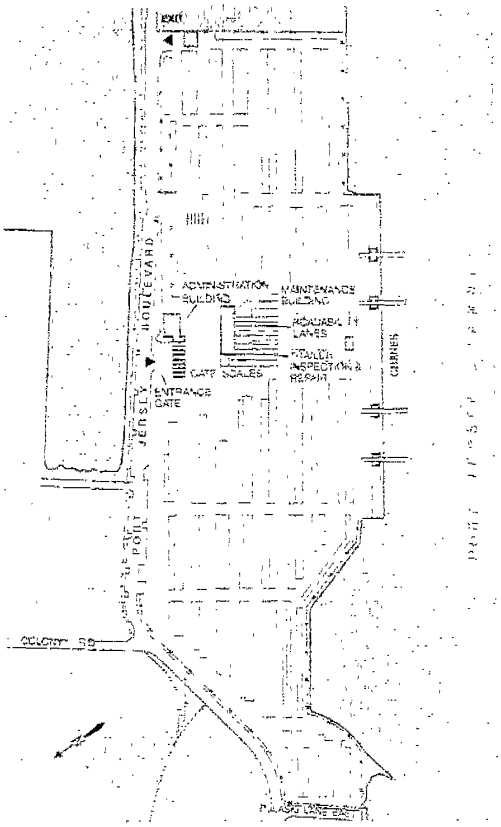
PORT NEWARK/ELIZABETH VEHICLE TERMINALS

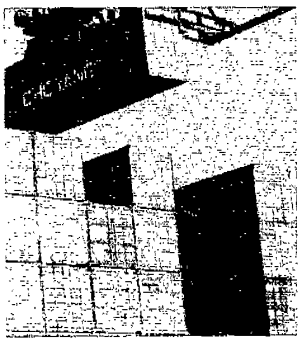


The Port of New York and New Jersey is one of the largest ports in the U.S.

GLOBAL MARINE TERMINAL

Address	282 Port Jersey Boulevard, Jersey City, NJ 07305 (201) 451-5200; (201) 451-2423 FAX
Entrance Gates	Port Jersey Boulevard
Primary Cargo Type	Containers, roro, heavy lift
Terminal Area	100 acres; 40.5 hectares
Length of Ship Berth	1800 feet; 549 meters
Depth at Dock	40 feet MLW; 12 meters MLW
Container Cranes	3 Star, 40-ton; 1 Krupp, 45-ton
Crane Capabilities	Height (80 feet); Outreach (193 feet); Tonnage (45 L
Equipment	Toploaders (30-ton); 5 Sploaders (8-ton); Forklifts (30-ton, 26-ton and 15-ton)
Intermodal	Proximity to North Jersey rail yards, 1 ½-mile to Greenville Yard Wheeled & stacked; Chassis pool; 88 reefer plug slots
Maintenance and Repair	Roadability inspection; Mobile Chassis container repair vans 10 Chassis repair bays; 5 roadability lanes
Computer Access	IBM real-time on-line system



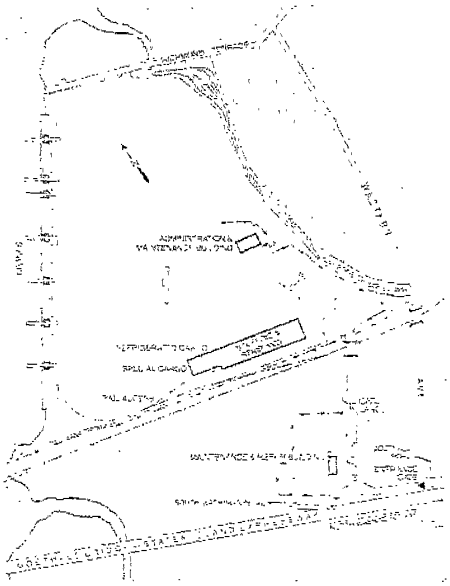


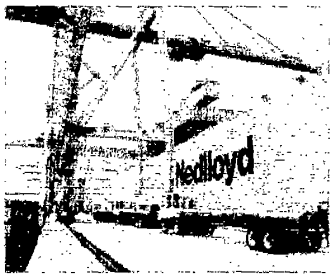
HOWLAND HOOK MARINE TERMINAL

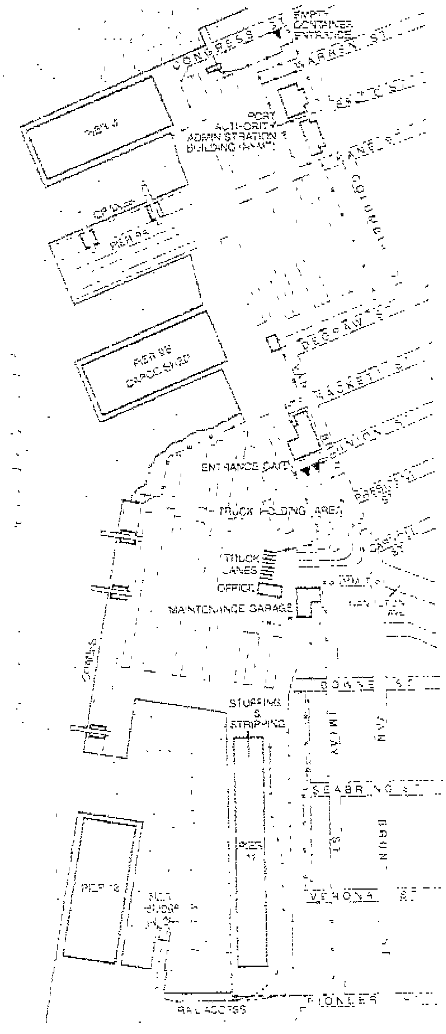
Address	300 Western Avenue Staten Island, NY 10303 (718) 273-7000 (718) 273-7050 FAX
Entrance Gates	North Washington Avenue & Western Avenue
Primary Cargo Type	Containers, general cargo, breakbulk
Terminal Area	197 acres / 79.7 hectares
Length of Ship Berth	2500 feet / 762 meters
Depth at Dock	42 feet MLW / 12.8 meters MLW for 2000 feet of berth 37 feet / 11.3 meters MLW for 500 feet of berth
Container Cranes	2 HH - 40-ton 2 Paceco - 40-ton 1 Peiner - 50-ton with rotating spreader

Crane Capabilities	HH	Paceco	Peiner
Height	75 feet	100 feet	75 feet
Outreach	115 feet	135 feet	106 feet
Tonnage	40 LT	40 LT	50 LT

Equipment	Yard tractors Toplifters, 45-ton Lift-trucks, 13.5-ton to 30-ton Hi-los, 3-ton to 4-ton
Stuffing & Stripping Facilities intermodal	200,000 square feet, includes deep-freeze On-dock rail connection within terminal
Maintenance and Repair	Full maintenance/repair facilities Roadability inspection station 600 reefer plug slots
Computer Access	On-line integrated terminal control system and fully automated paperless gates

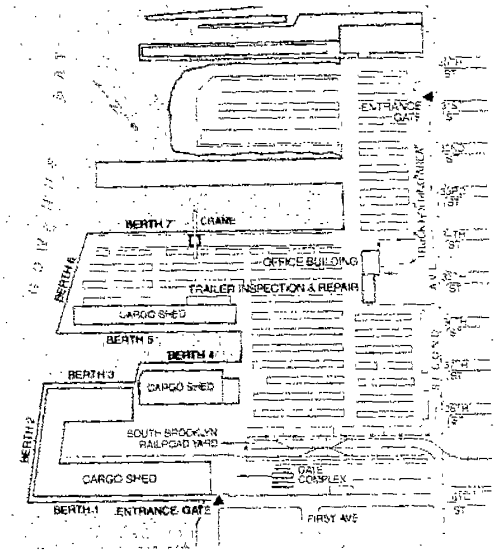






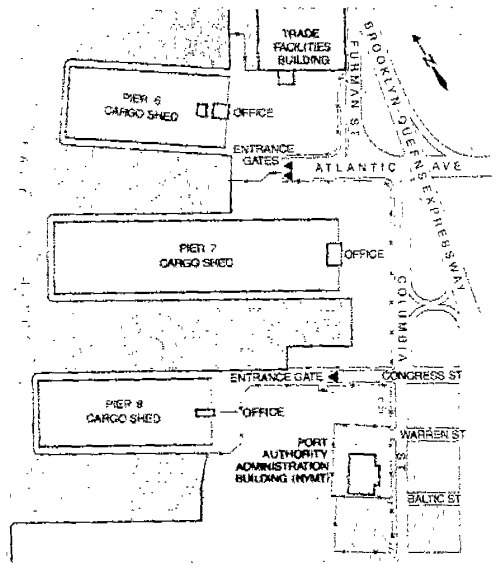
RED HOOK CONTAINER TERMINAL

Address	[illegible] Hamilton Avenue Brooklyn, NY 11231 [illegible] [illegible] 643-[illegible] FAX
Entrance Gates	Hamilton Avenue Empty container [illegible] complex on Congress & Columbia Streets
Primary Cargo Type	Containers [illegible] breakbulk
Terminal Area	79 acres / 32 hectares
Length of Ship Berth	[illegible] feet / 534 meters [illegible] feet / 957 meters breakbulk
Depth at Dock	42 feet MLW / 12.8 meters MLW
Container Cranes	3 Paceco 40-ton 1 Star 40 70-ton
Crane Capabilities	Paceco / Star Height: [illegible] feet / 68 feet Outreach: [illegible] feet / 335 feet Tonnage: 40 LT / 40 LT
Equipment	Fork lifts, 15 – 26-ton Yard hustlers Side loaders Toploaders [illegible]-ton Front-end loaders [illegible] (22-45[illegible])
Stuffing & Stripping Facilities	[illegible],000 square feet
Special Facilities	Fumigation facility
Intermodal	Red Hook connection with NY Cross Harbor Railroad Wheeled & stacked chassis pool
Maintenance and Repair	Terminal served by mobile units [illegible] reefer plug slots
Computer Access	IBM on-line system



SOUTH BROOKLYN MARINE TERMINAL

Address	39th Street Brooklyn, NY 11219
Contact	New York City Economic Development Corp. 110 William St. New York, NY 10038 (212) 312-3552 (212) 312-3916 FAX
Entrance Gates	Second Avenue & 51st Street and 39th Street
Primary Cargo Type	ro/ro, breakbulk
Terminal Area	110 acres / 45 hectares
Length of Ship Berth	6125 ft 1870 meters breakbulk
Depth at Dock	27 feet MLW / 8.2 meters MLW
Shed Space	600,000 square feet



BROOKLYN MARINE TERMINAL, PIERS 6-8

Address	50 Columbia Street Brooklyn, NY 11201 (718) 330-2950 (718) 855-3618 FAX
Entrance Gates	Foot of Atlantic Ave
Primary Cargo Type	Breakbulk
Terminal Area	10 acres / 4 hectares
Length of Ship Berth	5860 ft / 1792 meters
Depth at Dock	32 feet MLW / 10 meters MLW

PORT SERVICES

Putting The World Within Your Reach.

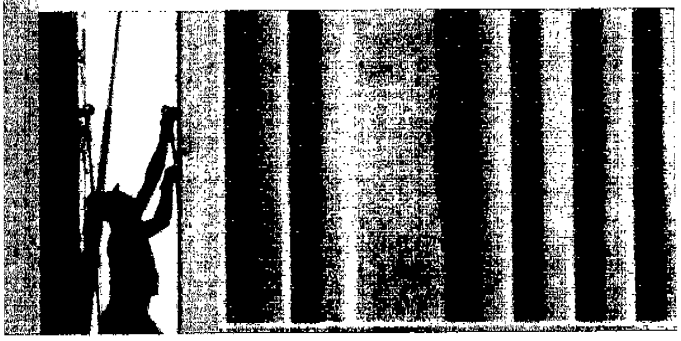
No matter where in the world you're based, the Port Authority's network of professional international and domestic sales representatives are strategically organized to provide you with invaluable assistance.

As a customer, you get more than quality handling capabilities, a dependable labor force, and expert transportation services at the Port. You get access to Port Authority specialists who can help you with everything from real estate for manufacturing plants and office space for corporate headquarters to the benefits offered by locating in a Foreign-Trade Zone.

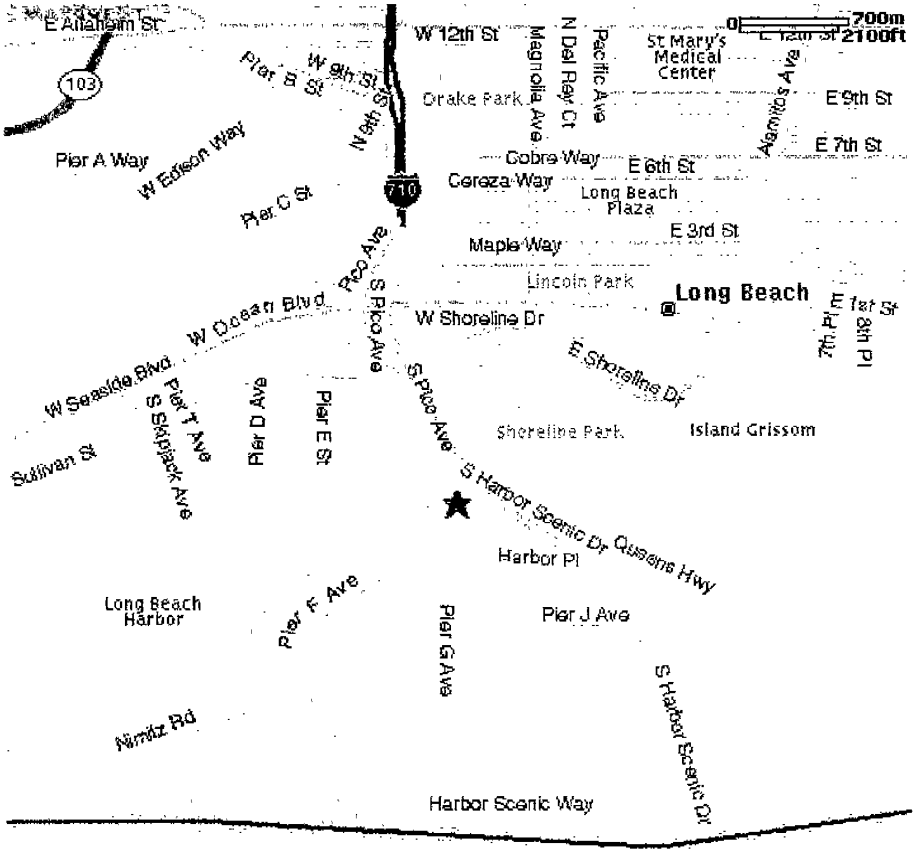
Considering the tremendous scope of sea, land and air services available through the Port Authority and Port of New York & New Jersey, the word "shipping" seems rather limited. Today, you need a total transportation resource, a trusted partner who will deliver comprehensive services, while at the same time actively seeking new and better options to help your business compete and succeed in a global marketplace.

Let the Port of New York & New Jersey put hundreds of years of cargo handling and world trade leadership in motion for you.

Let the Port of New York & New Jersey put hundreds of years of cargo handling and world trade leadership in motion for you.



二、長堤港

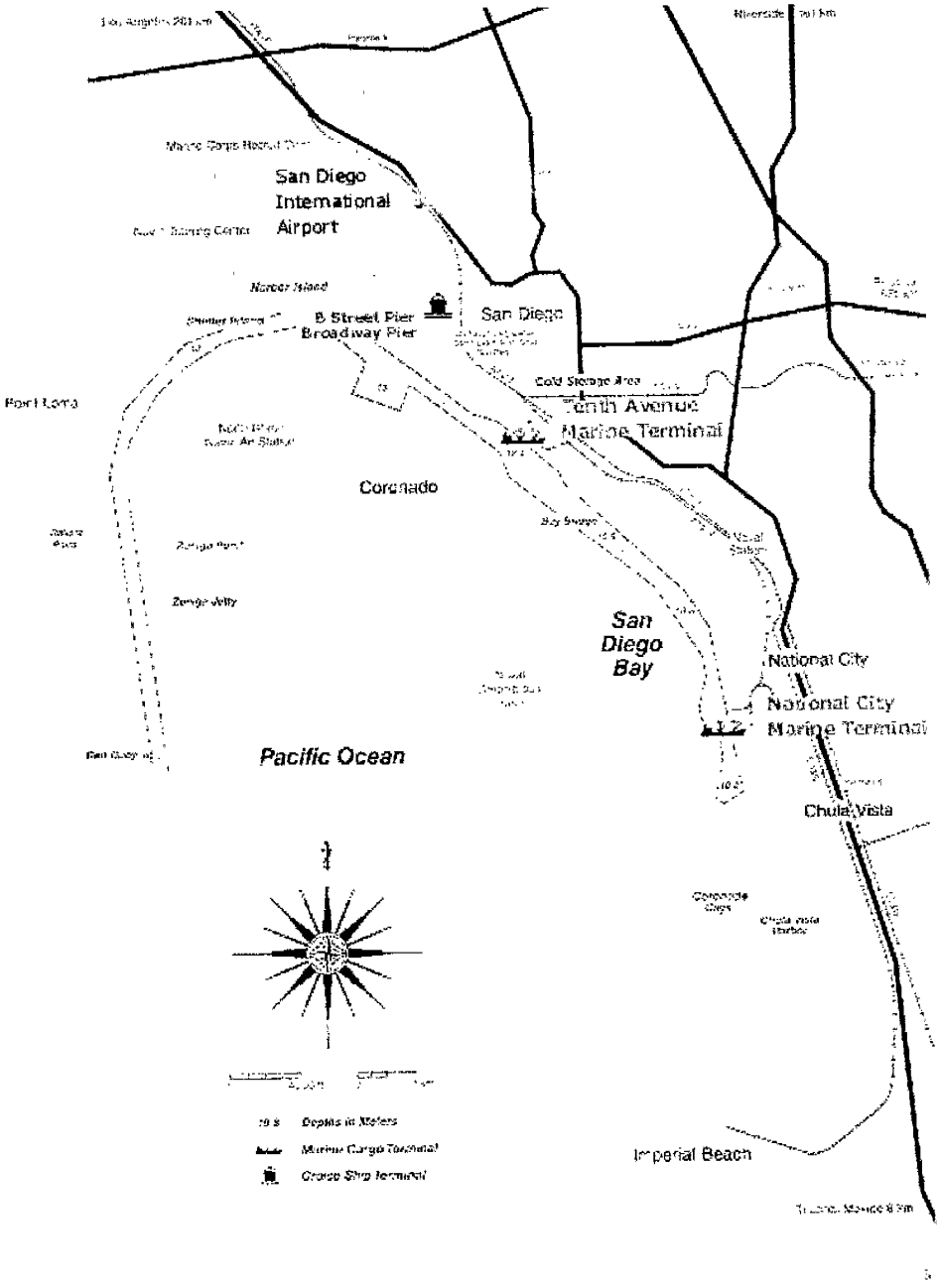


長堤港

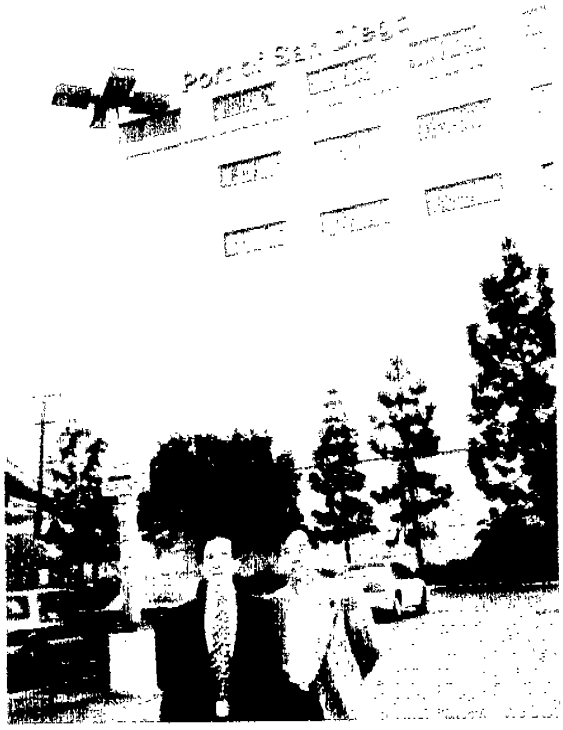
長堤遊艇港(Long Beach Downtown Marina)

長堤遊艇港(Long Beach Downtown Marina)

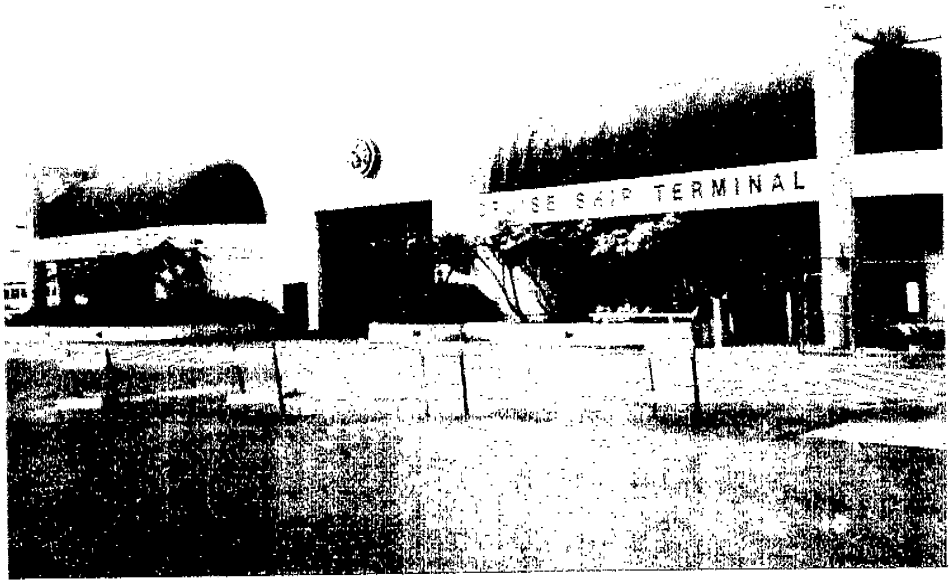
三、聖地牙哥港


San Diego
International
Airport
Harbor Island
B Street Pier
Broadway Pier
San Diego
Cold Storage Area
Tenth Avenue
Marine Terminal
Point Loma
Coronado
Zuniga Jetty
San
Diego
Bay
National City
National City
Marine Terminal
Pacific Ocean
Chula Vista
Imperial Beach
Depths in Meters
Marine Cargo Terminal
Cruise Ship Terminal

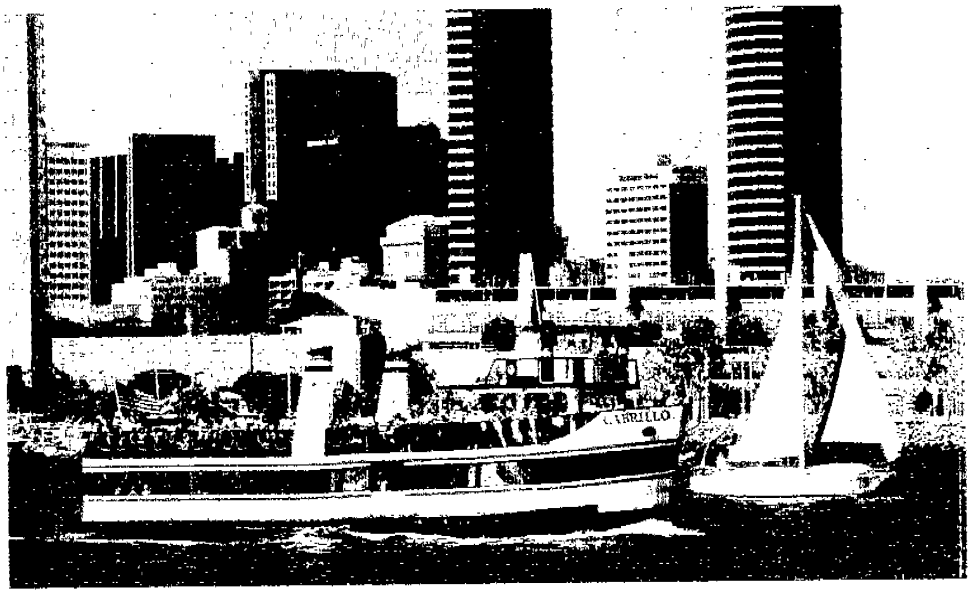
聖地牙哥港



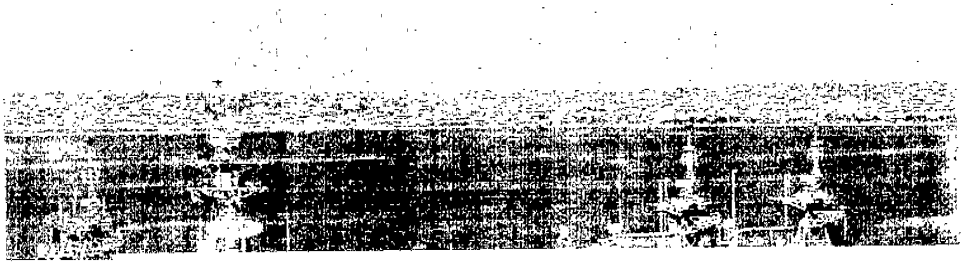
聖地牙哥港務局



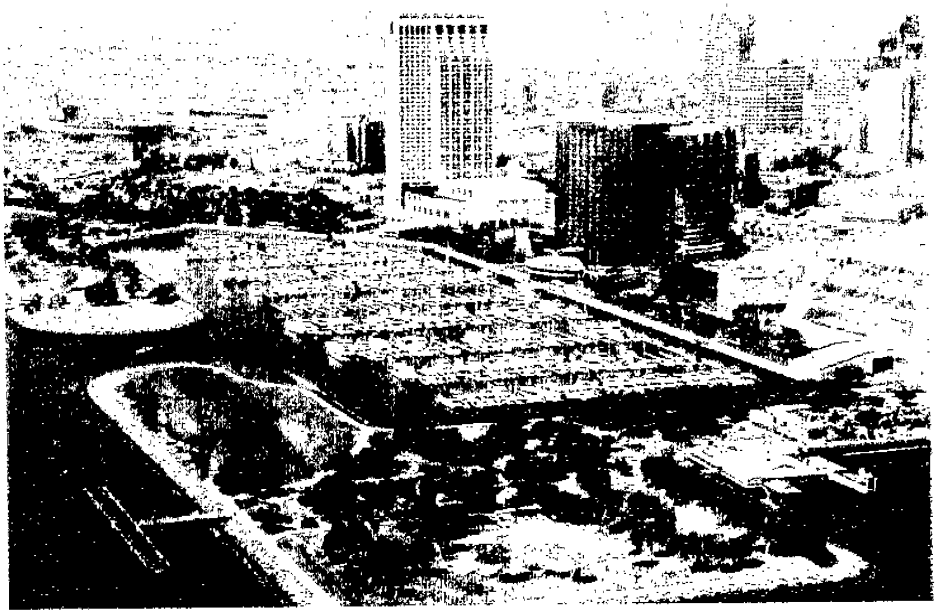
聖地牙哥港郵輪碼頭



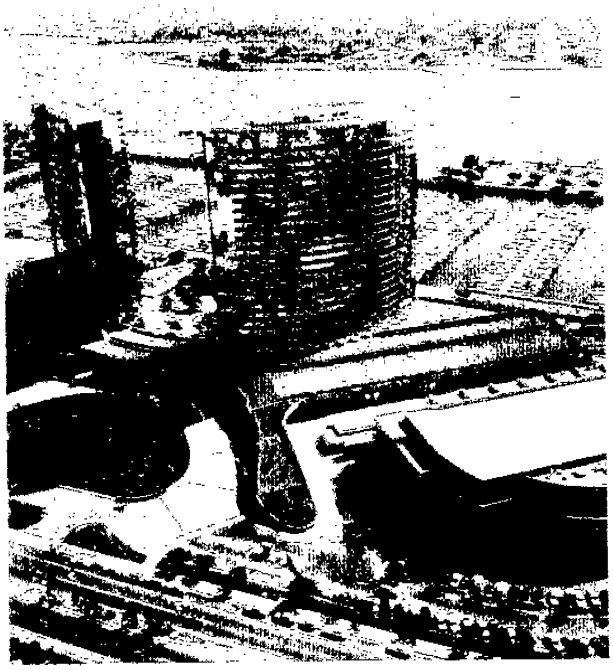
聖地牙哥港環港遊輪



聖地牙哥港 **Broadway Pier**

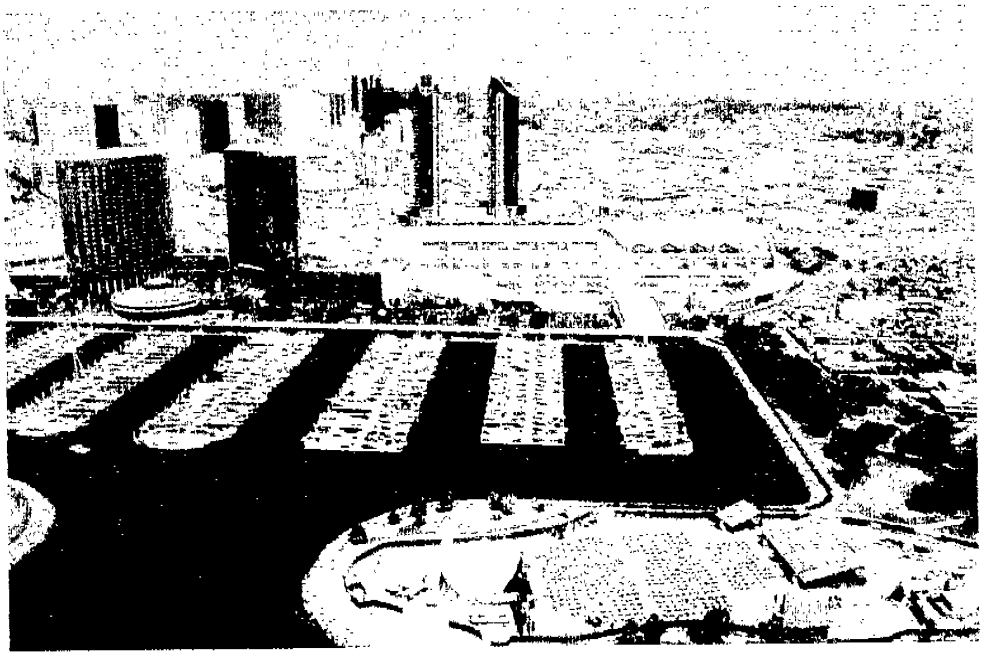


聖地牙哥 **Marriott** 遊艇港

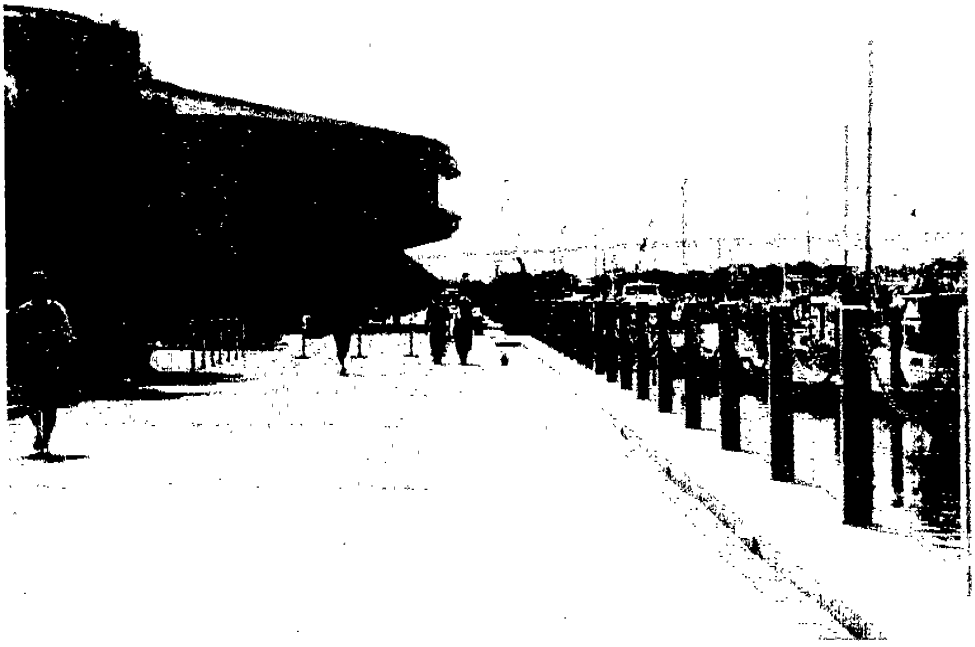


聖地牙哥南堤防堤體兼海洋公園

馬利特遊艇港中心

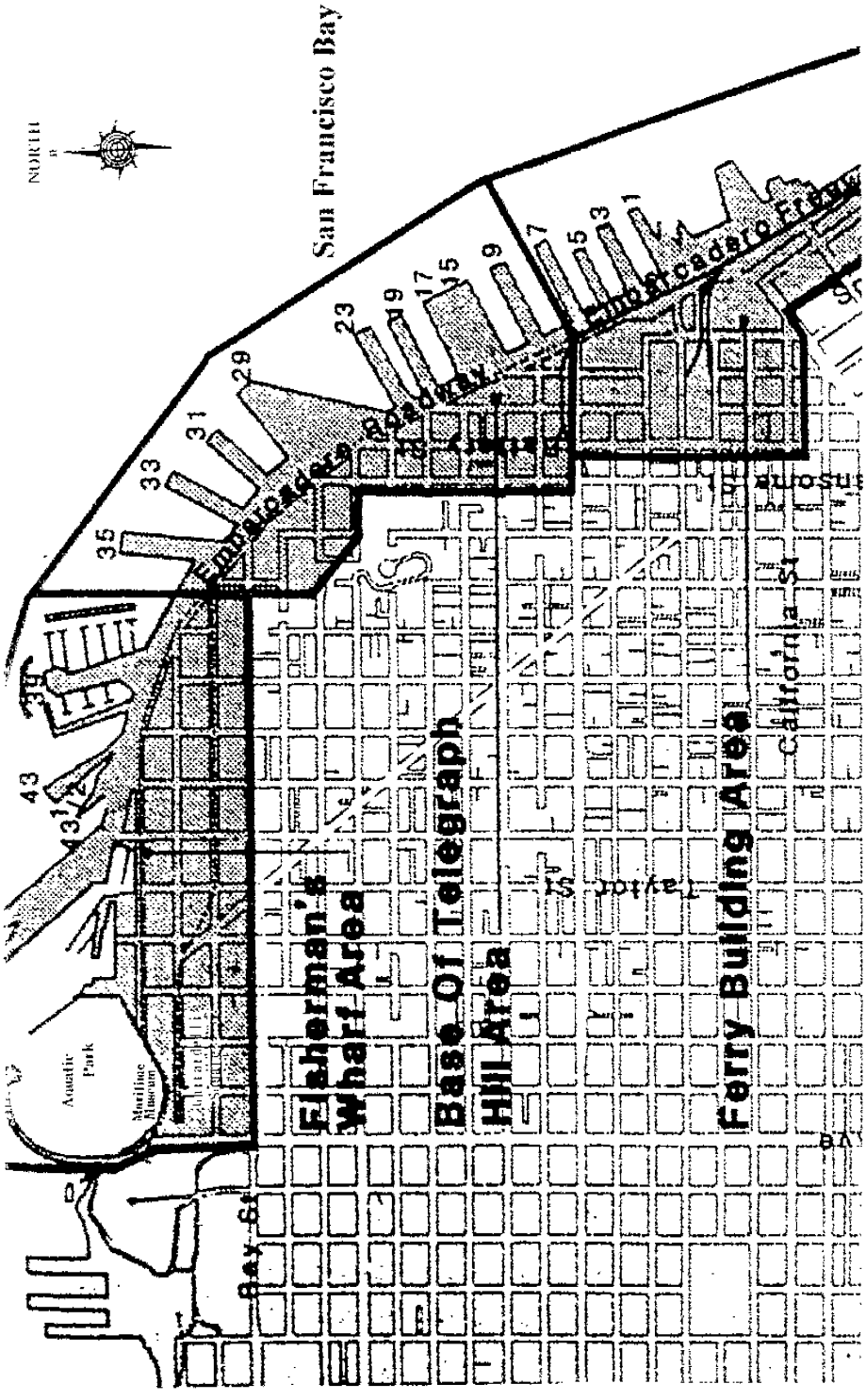


馬利特遊艇港中心



馬利特遊艇港中心

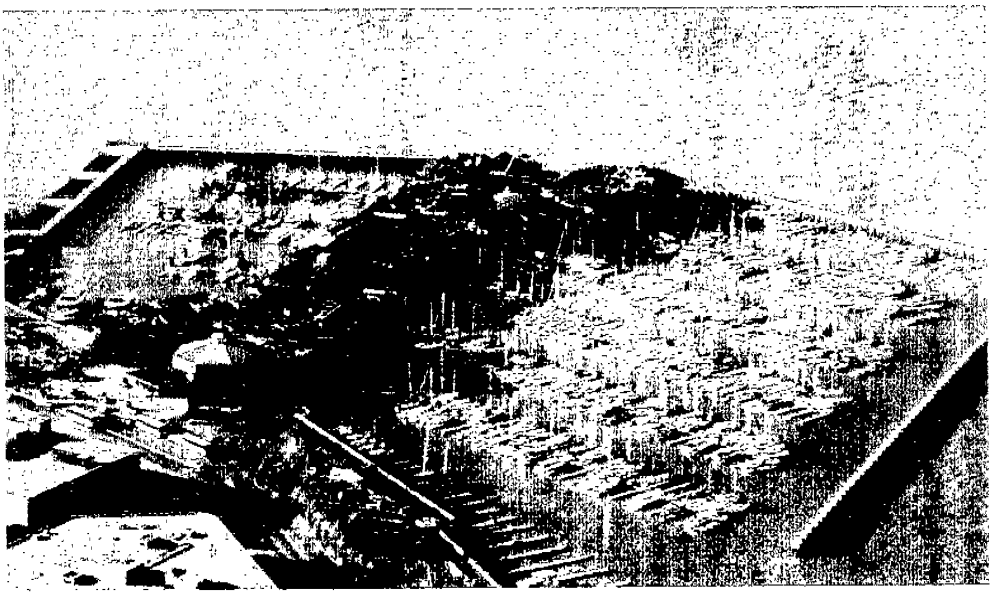
四、舊金山漁人碼頭


San Francisco Bay
NORTH
Aquatic Park
Maritime Museum
Fisherman's Wharf Area
Base Of Telegraph Hill Area
Ferry Building Area
Taylor St
California St
Bay St

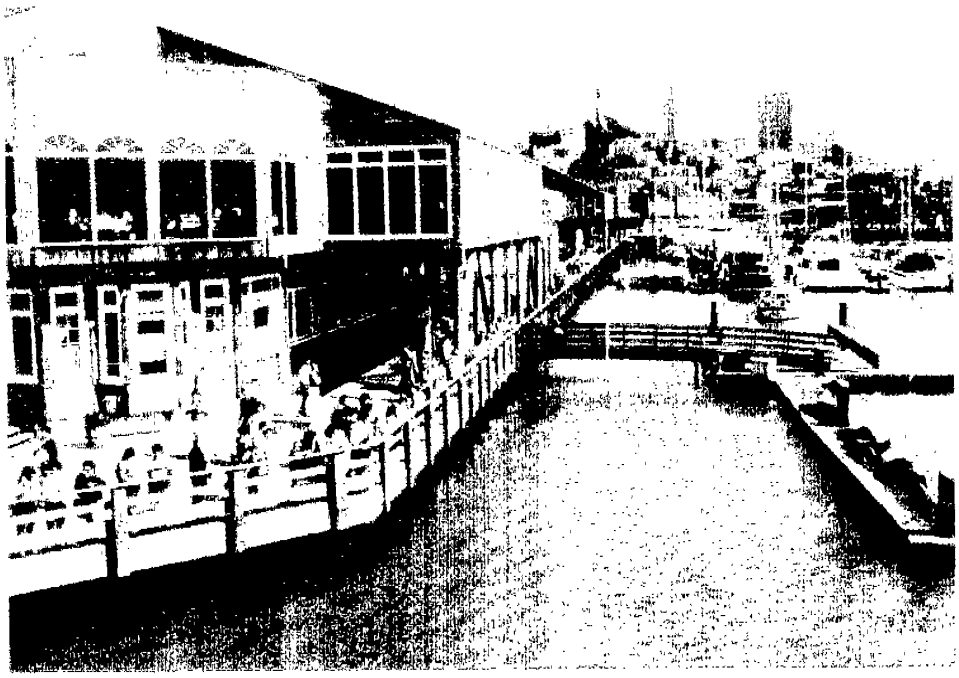
舊金山港

舊金山漁人碼頭

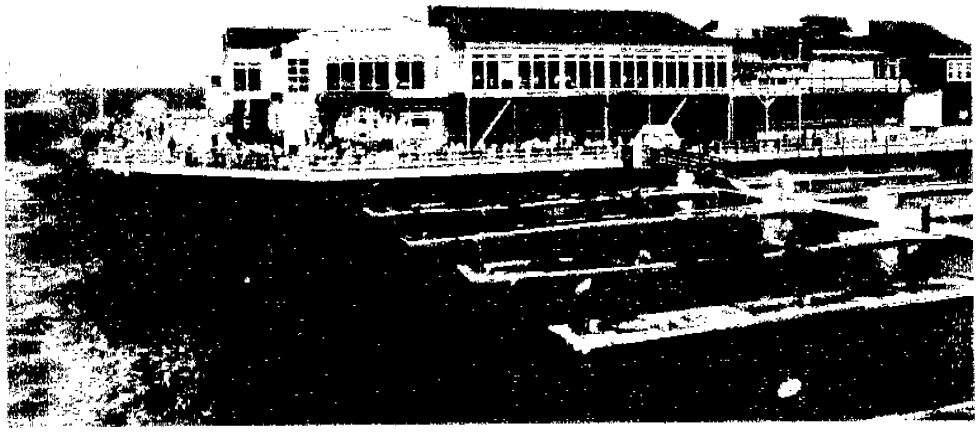
吉拉迪利廣場(Ghirardelli Square)購物商場



水岸公園(Aquatic Park)



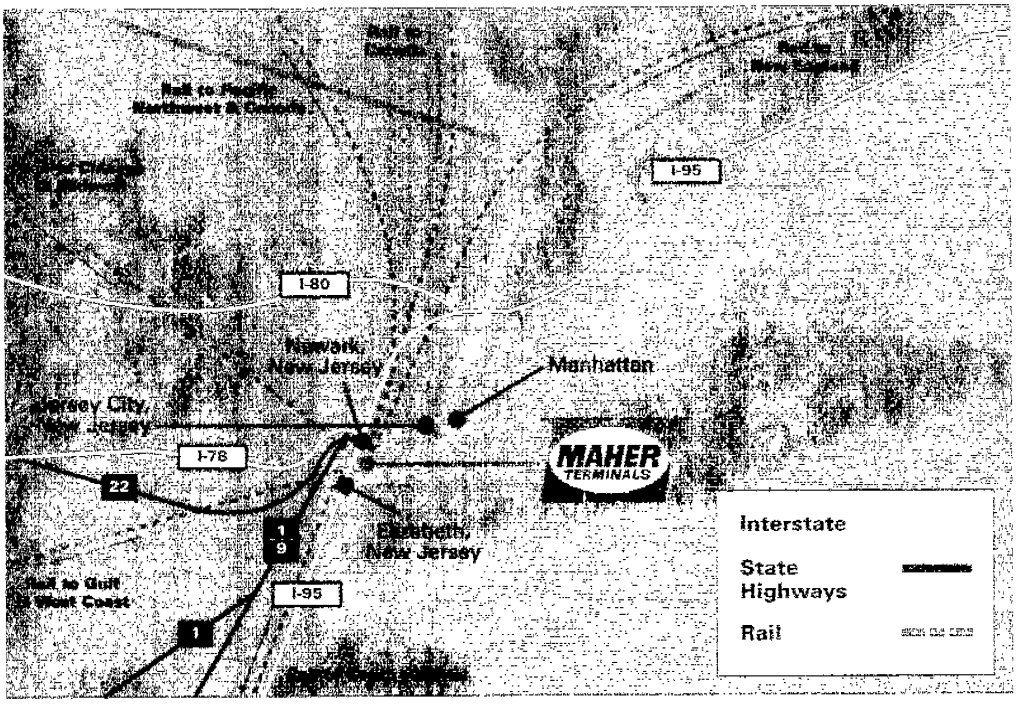
海事歷史博物館(Maritime Museum)



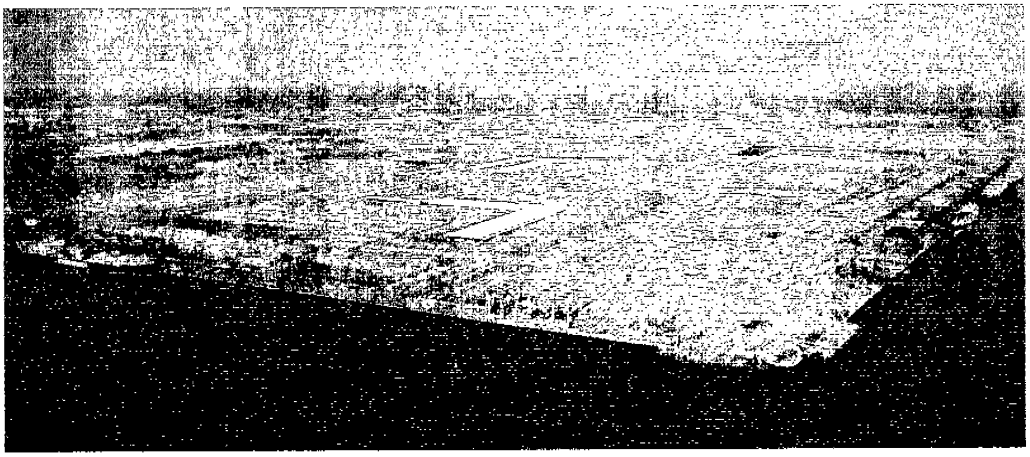
39 號漁人碼頭(Fisherman's Wharf)

39 號漁人碼頭(Fisherman's Wharf)

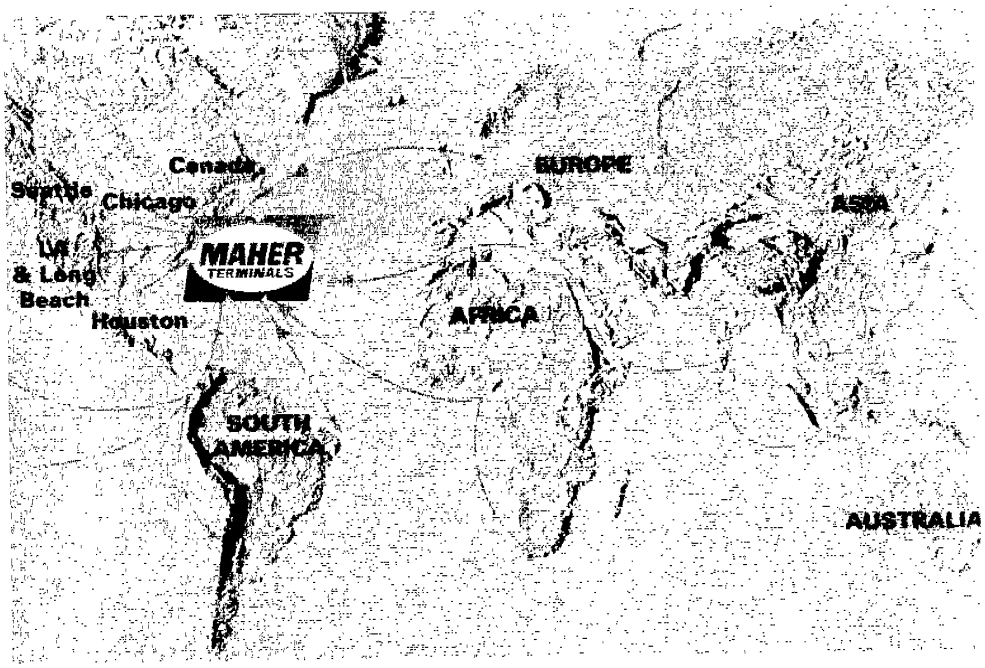
五、紐約/新澤西港



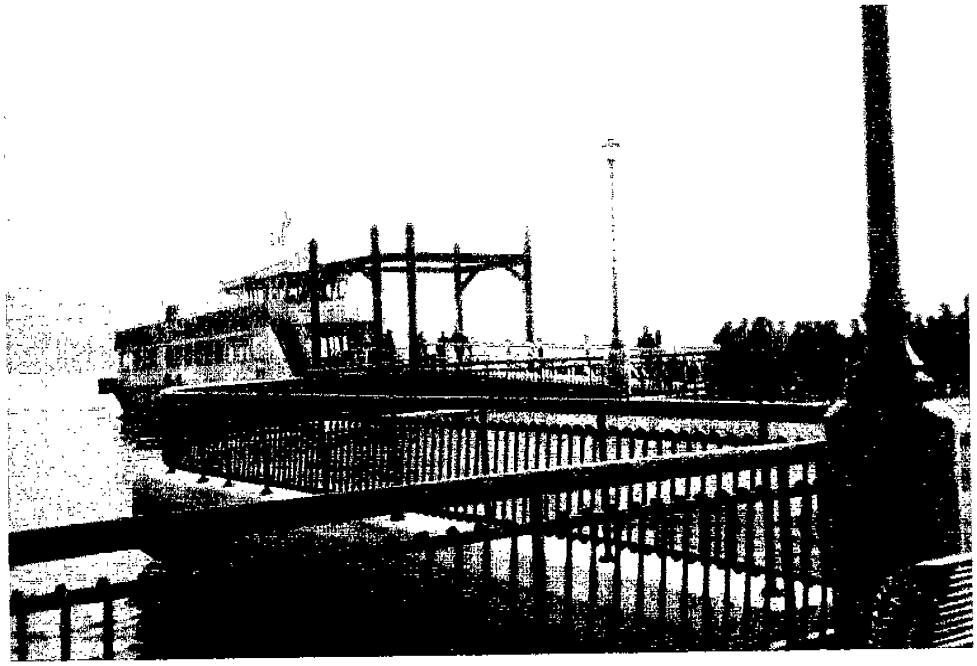
紐約/新澤西港(Port of New York / New Jersey)



新澤西市汽車碼頭



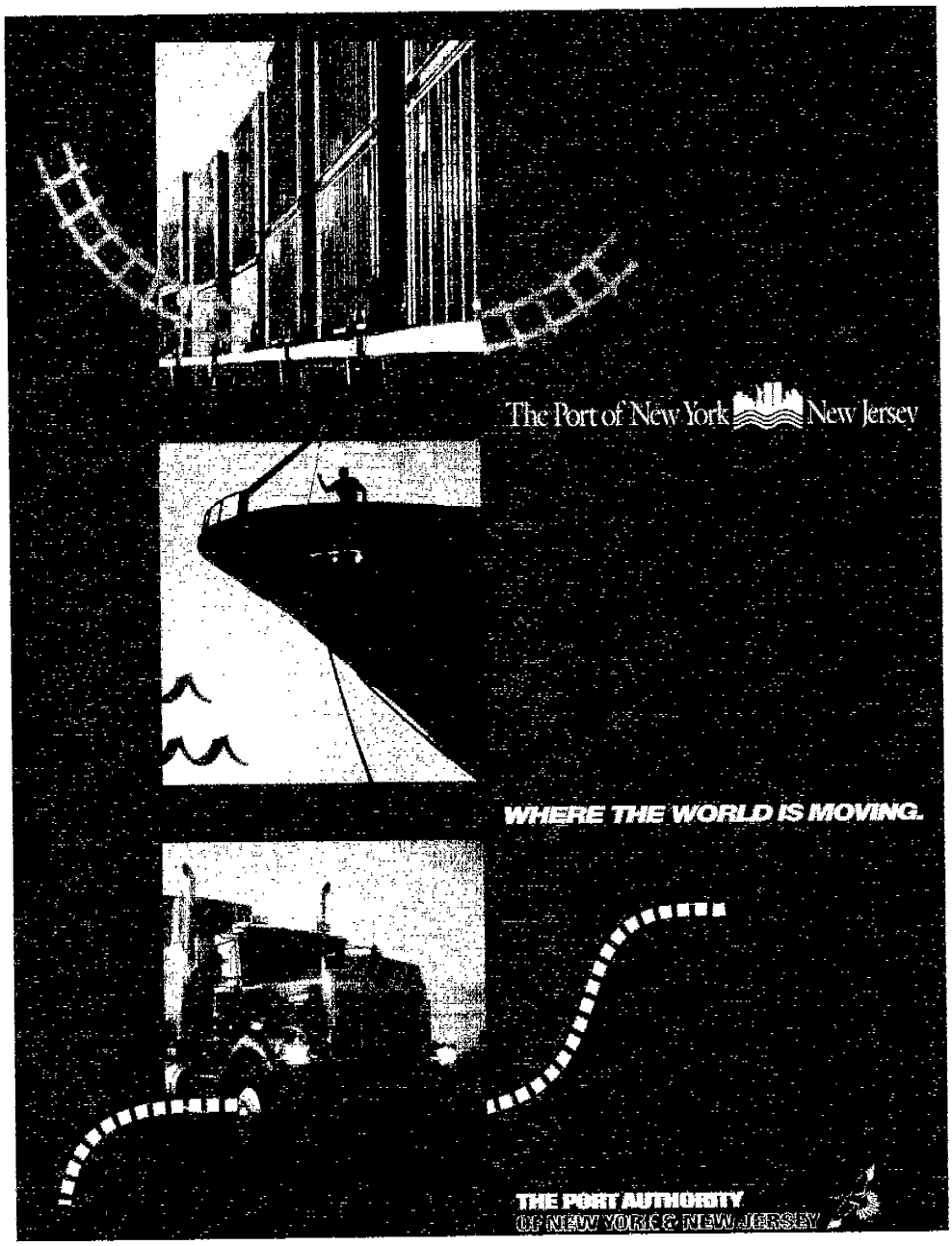
紐約/新澤西港之定期服務航線約 80 條航線



曼哈頓至長島的 Ferry 碼頭

紐約/新澤西港

紐約/新澤西港


The Port of New York New Jersey
WHERE THE WORLD IS MOVING.
THE PORT AUTHORITY
OF NEW YORK & NEW JERSEY

SPECIALIZED FACILITIES

SUCCESS
IN MOTION

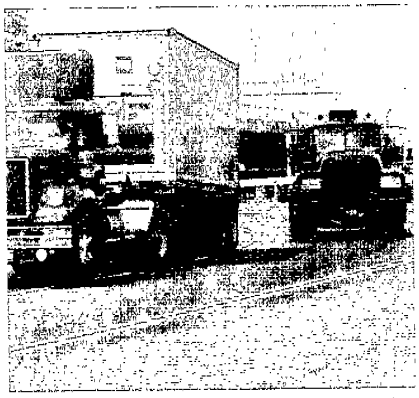
INTERMODAL NETWORK

Each year, more than 80 steamship lines make nearly 4,500 regularly scheduled calls at the Port of New York & New Jersey. From this exceptional "hub port," cargoes speed easily from ship to final destination via a comprehensive intermodal system.

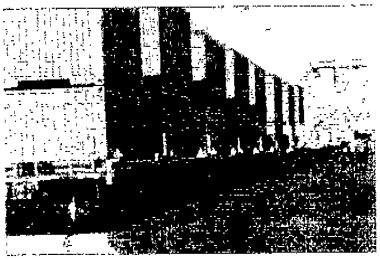
By Road

Thousands of trucking companies serve the Port of New York & New Jersey, providing quality handling and responsive service from pick-up through delivery. The Port's proximity to the most extensive interstate highway network in the region ensures that cargo will be moved on and off terminals and to/from distribution centers quickly and efficiently.

Expediting services such as ACES, (Automated Cargo Expediting System), for electronic cargo management and communications, and Sea Link, a truck driver identification system that speeds processing, are paving the way for paperless cargo movement at the Port.



Thousands of trucking companies serve the Port and provide handling services, from pick-up through delivery.



By far, more than all other East Coast ports combined.

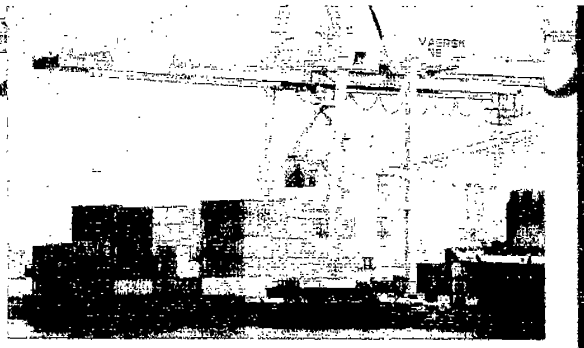
By Rail

With 14 intermodal rail transfer terminals, including both on-dock and near-dock facilities, the Port's exceptional rail service specializes in vast capacity and fast turnaround. We offer more double-stack trains — the quickest, most cost-effective method of long distance overland shipping — than all the other East Coast ports combined.

From this exceptional "hub port," cargoes speed easily from ship to final destination via a comprehensive intermodal system.

ExpressRail, our expanded on-dock rail terminal, specializes in the handling, transfer and shipping of containers via double stack trains to the Midwest and Canada. Designed to accommodate expansion, ExpressRail can grow to meet the changing needs of its customers.

Reactivation of the Staten Island North Shore Railway, which runs directly into Howland Hook, expands the Port's on dock, double-stack rail handling capability even further. It also provides the marine terminal with direct rail connections to important inland markets in the Midwest, Canada, and the U.S. West Coast.



By Air

The Port Authority of New York & New Jersey operates three major airports — Newark International, John F. Kennedy International and LaGuardia – which together handle over 26% of all international air cargo shipments in the U.S., more than any other airport system in the world. Additionally, the airports' proximity to our marine terminals makes them ideally positioned for establishing sea/air shipping links.

Newark Airport serves as the major overnight express hub for the Eastern U.S., while JFK is the leading air cargo gateway for automated customs services. LaGuardia, the region's largest domestic airport, offers easy access to New York City's business and financial centers, making it the ideal origin and destination airport for time sensitive courier type materials.

By Water

The Port is currently served by two major feeder barge operators, connecting the Port to markets as far north as Portland, Maine, and as far south as Norfolk, Virginia. Combined, they move more than 150,000 containers up and down the East Coast annually. Both dry and reefer containers can be accommodated. Trans Harbor fit-on/lift-off container service is also provided between Brooklyn's Red Hook Container Terminal and the Elizabeth – Port Authority Marine Terminal.

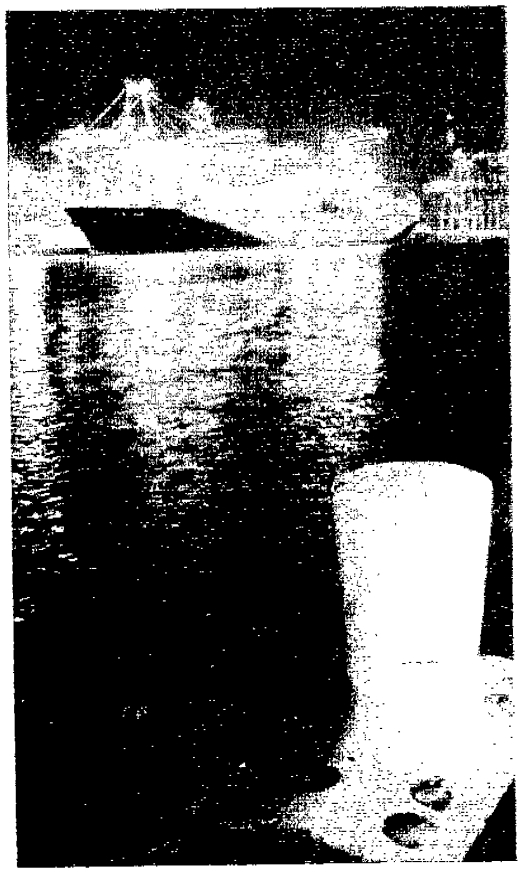
Innovative programs and services further enhance the competitive advantages of intermodalism. Recognizing the economic benefits of neutral chassis pools, several terminal operators and leasing companies have established such chassis resources at Port Newark/Elizabeth, as well as in Brooklyn.

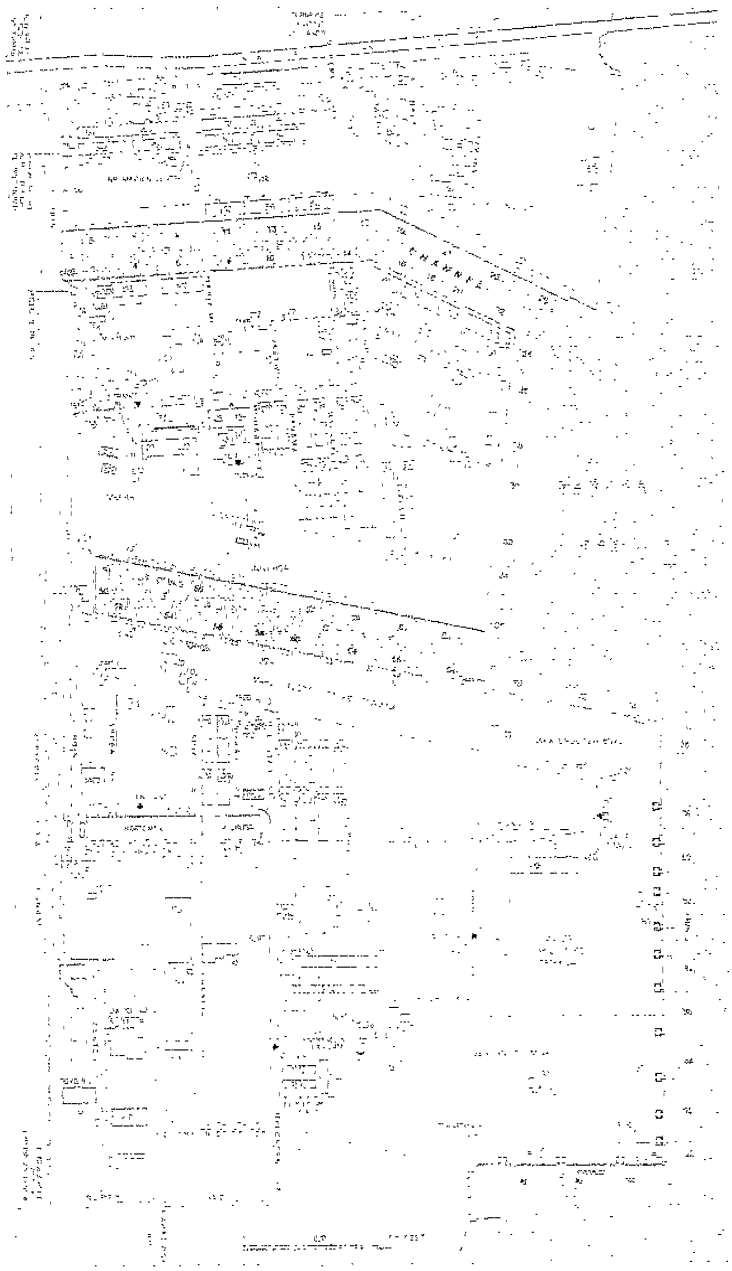
Port Newark/Elizabeth Marine Terminal

The Port Newark/Elizabeth Marine Terminal is the most active container port on the East Coast, handling more than 12 million long tons of everything from cocoa to chemicals every year.

Additionally, with Foreign-Trade Zone 49 designation, tenants located here can take advantage of all Zone benefits, including the deferral, reduction and possible elimination of U.S. Customs duties on imported goods.

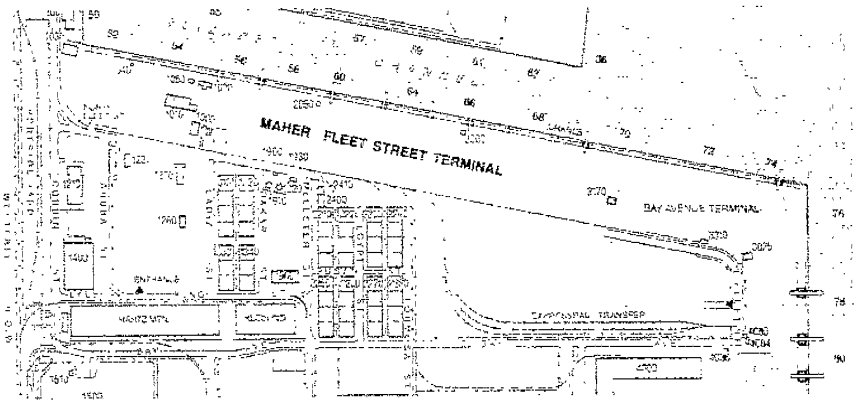
The most active container port on the East Coast.





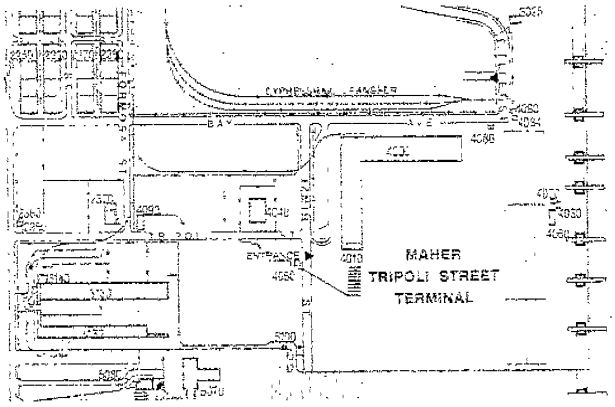
MAHER FLEET STREET TERMINAL

Address	1020 North Fleet Street Elizabeth, NJ 07201 (908) 527-8220 (908) 528-9884 FAX
Entrance Gates	Lyle King Street
Primary Cargo Type	Containers, roro
Terminal Area	195 acres / 79 hectares
Length of Ship Berth	4200 feet / 1280 meters
Depth at Dock	35 feet MLW / 11 meters MLW
Container Cranes	2 Star 30-ton; 5 Paceco, 50 ton
Crane Capabilities	Star / Paceco
Height	72 feet / 100 feet
Outreach	113 feet / 135 feet
Tonnage	30 LT / 50 LT
Equipment	Straddle carriers Yard hustlers Stackers, 30-ton, 75-ton and 5-ton Toploaders, 40-ton Empty handlers, 5-high Flat beds Mafis 20-40 360 chassis in vertical stacking
Intermodal	On-dock rail, ExpressRail. Daily service to Montreal, Toronto, and U.S. Midwest destinations
Chassis Pool	Chassis storage system Trucking services
Maintenance and Repair	On-site container and chassis repair Roadability inspection On-site reefer maintenance and repair 200 reefer plug slots
Computer Access	On-line VAX Cluster, integrated with terminal management systems and directly to steamship accounts



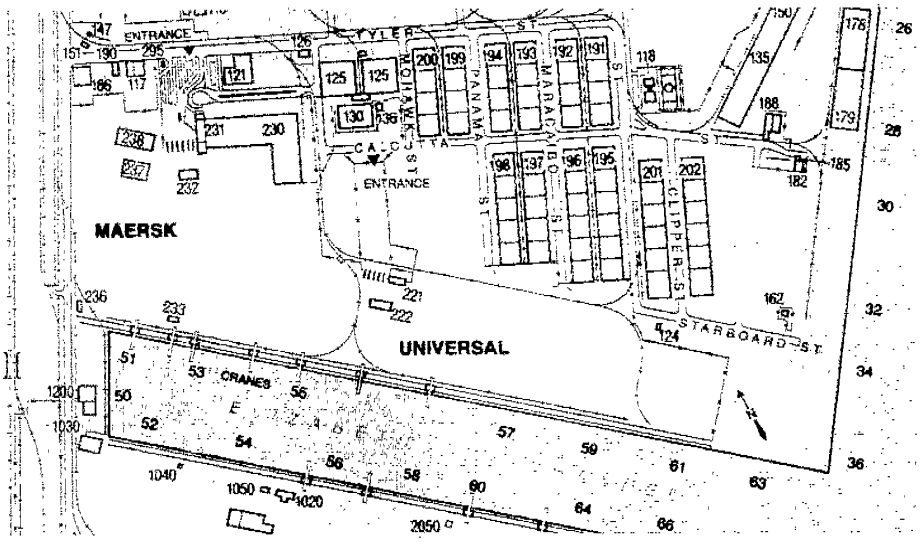
MAHER TRIPOLI STREET TERMINAL

Address	4010 Tripoli Street Elizabeth, NJ 07201 (908) 527-8400 (908) 558-1379 FAX		
Entrance Gates	Tripoli Street		
Primary Cargo Type	Containers, ro/ro		
Terminal Area	240 acres / 98 hectares		
Length of Ship Berth	3150 feet / 960 meters		
Depth at Dock	38 feet MLW / 12 meters MLW		
Container Cranes	3 Morris, 30-ton 5 Paceco, 40-ton 1 Canron, 40-ton		
Crane Capabilities	Morris	Paceco	Canron
Height	90 feet	81 feet	82 feet
Outreach	125 feet	115 feet	115 feet
Tonnage	30 LT	40 LT	40 LT
Equipment	Yard hustlers Stackers, 30-ton, 15-ton and 5-ton Toploaders, 40-ton Forklifts, 4-ton and 2.5-ton Empty handlers, 5-high Flat beds Mafis - 20/40 Transtainers - 30-ton 1250 chassis in vertical stacking		
Intermodal	New direct access to ExpressRail. Rail / on-dock service to Montreal, Toronto, and Midwest destinations		
Maintenance and Repair	On-site container and chassis repair Roadability inspection On-site reefer maintenance and repair 200 reefer plug slots		
Chassis Pool	Chassis storage system; Trucking services		
Computer Access	On-line VAX Cluster, integrated with terminal management systems and directly to steamship accounts		



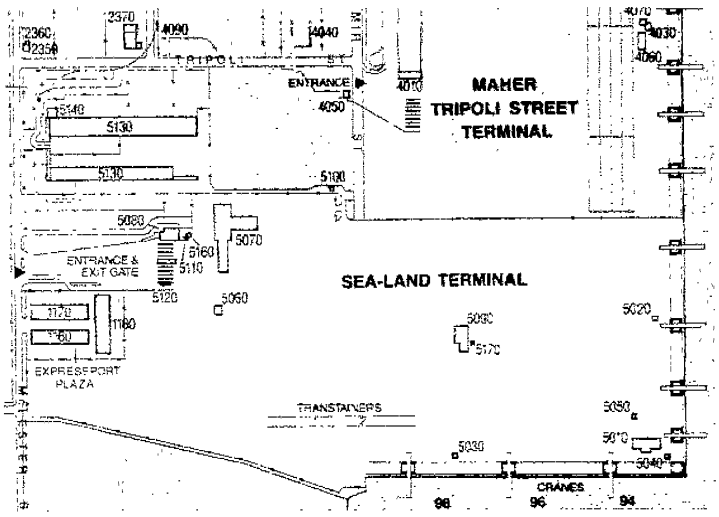
MAERSK LINE / UNIVERSAL TERMINAL

Address	231 Tyler Street Port Newark, NJ 07114 (201) 589-6200 (201) 589-6214 FAX
Entrance Gates	Tyler Street and Calcutta Street
Primary Cargo Type	Containers, ro/ro
Terminal Area	153 acres / 62 hectares
Length of Ship Berth	3622 feet / 1165 meters
Depth at Dock	35/40 feet MLW / 11-12 meters MLW
Container Cranes	3 Paceco, 50-ton 5 Paceco, 40-ton
Crane Capabilities Height	100 feet
Outreach	150 feet
Breakbulk Tonnage	56 LT
Equipment	Stackers, 15-ton and 28-ton Toploaders, 50-ton, 35-ton and 13-ton Hi-los, 5-ton to 7-ton
Stuffing & Stripping Facilities	175,000 square feet
Intermodal	Adjacent to ExpressRail Wheeled and stacked Chassis pool
Maintenance and Repair	12-bay roadability garage 30-bay maintenance and repair garage 12-bay reefer shop 421 reefer plug slots
Computer Access	IBM on-line system



SEA-LAND TERMINAL

Address	5080 McLester Street Elizabeth, NJ 07114 (908) 558-6000 (908) 558-6431 FAX
Entrance Gates	McLester Street
Primary Cargo Type	Containers
Terminal Area	286 acres / 106 hectares
Length of Ship Berth	4519 feet / 1377 meters
Depth at Dock	48 feet MLW / 12 meters MLW
Container Cranes	8 Paceco, 30-ton; 1 Mitsubishi, 40-ton
Crane Capabilities	Paceco Mitsubishi Height 81 feet 88 feet Outreach 115 feet 126 feet Tonnage 30 LT 40 LT
Equipment	Toploaders, 30-ton Forklifts, 2.5-ton to 25-ton Transtainers, 40-ton
Stuffing & Stripping Facilities	306,000 square feet
Intermodal	Adjacent to ExpressRail with daily double-stack trains to U.S. Midwest & Canada Trucking services CSXI stack train service to Chicago & West Coast provided at Little Ferry Yard 469 reefer plug slots
Maintenance and Repair	Complete on-site maintenance facility Roadability inspection
Computer Access	Computer-integrated terminal operation, with real-time access to Sea-Land's international computer network

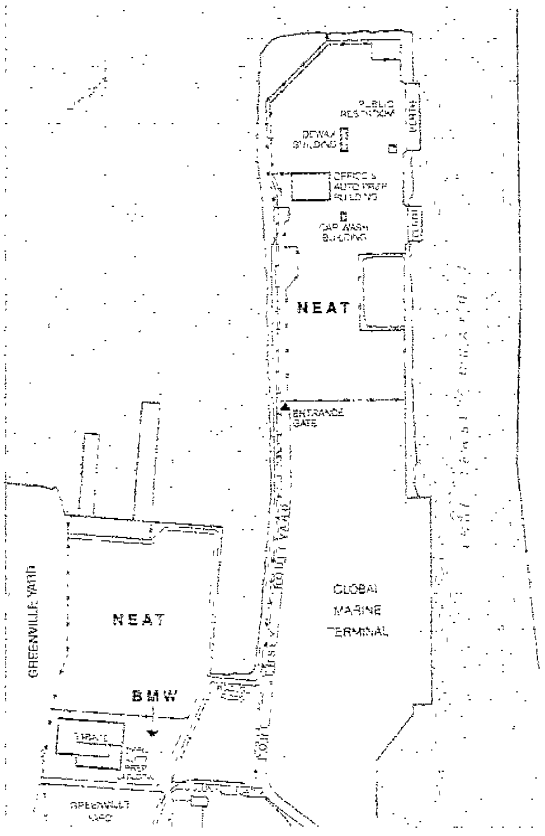


VEHICLE TERMINALS

With five individual vehicle processors offering an extensive range of services on over 430 acres, the Port of New York & New Jersey continues to be one of the dominant auto handling ports in the U.S.

Vehicle processors can cover everything from simple storage and shipping logistics to sophisticated inspections, modifications and assembly operations for quality assurance and regulatory compliance programs — all while offering immediate access to the most lucrative automobile market in America. In addition there is:

- Improved rail access to our facilities with connections to and from the entire U.S. and Canada, including new state-of-the art rail terminals at Port Jersey/Greenville and Port Newark/Elizabeth.
- A comprehensive and unique Quality Vehicle Handling Program to assure vehicles shipped through the Port receive the utmost care.
- Foreign Trade Zone benefits for all processing facilities, which can reduce, defer or eliminate U.S. Customs duties.
- Intensive security measures that have created a remarkably incident free operation.
- The East Coast's most immediate access to Conrail/Norfolk Southern's Triple Crown AutoRailer network at the Portside Yard, offering unparalleled flexibility in vehicle distribution throughout North America.



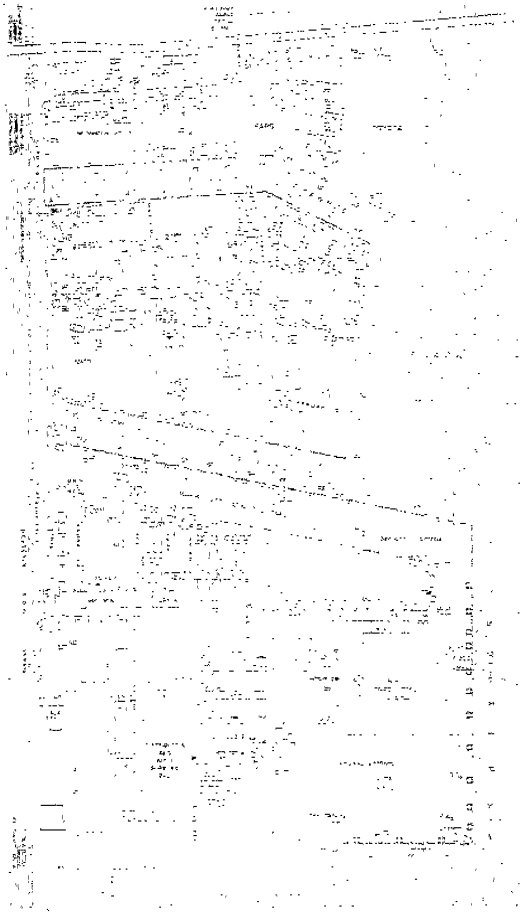
AUTO MARINE TERMINAL

AUTO MARINE TERMINAL

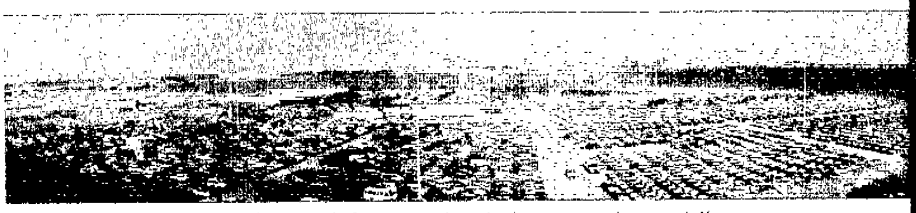
Acreage	130 acres / 53 hectares
Number of Berths	2
Berth Space	1,800 feet / 549 meters
Depth at Dock	32 feet MLW / 10 meters MLW
Intermodal	Direct rail
Vehicle Processors	
BMW of North America	15 acres / 6 hectares
Entrance Gate	Colony Road
Northeast AutoMarine Terminal (N.E.A.T.)	115 acres / 47 hectares
Entrance Gate	Port Jersey Blvd.

PORT NEWARK-ELIZABETH VEHICLE FACILITIES

Acreage	304 acres / 123 hectares
Number of Berths	6
Berth Space	4,333 feet / 1311 meters
Depth at Dock	35-40 feet MLW / 11-12 meters MLW
Intermodal	Direct rail
Vehicle Processors	
Distribution & Auto Services Inc. (DAS)	101 acres / 41 hectares
Entrance Gate	Polaris St.
FAPS Inc	113 acres / 46 hectares
Entrance Gates	Crandway & Port Sts / Kellogg Street
Toyota Motor Sales, U.S.A. Inc	90 acres / 36 hectares
Entrance Gates	Port St.



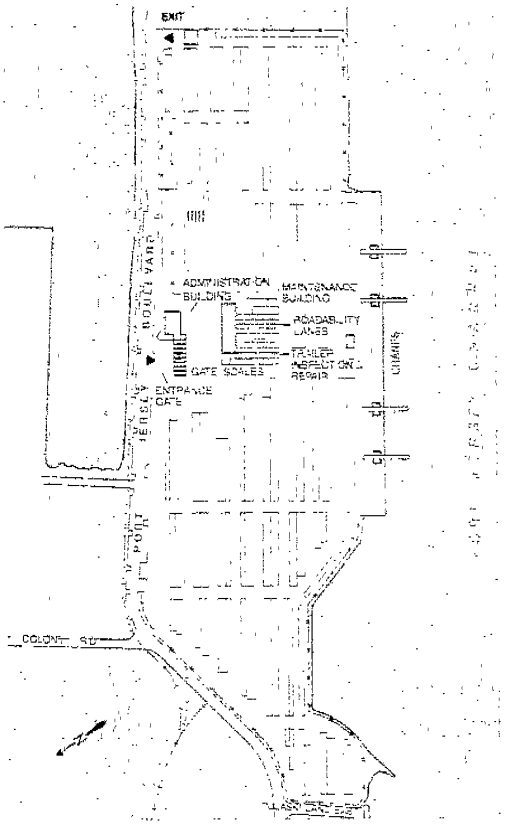
PORT NEWARK/ELIZABETH VEHICLE TERMINALS

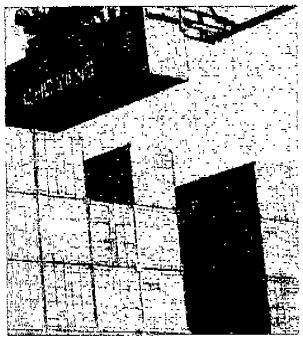


The Port of New York & New Jersey continues to be one of the busiest container ports in the U.S.

GLOBAL MARINE TERMINAL

Address	302 Port Jersey Boulevard Jersey City, NJ 07305 (201) 451-5200 (201) 451-2423 FAX
Entrance Gates	Port Jersey Boulevard
Primary Cargo Type	Containers, [illegible]
Terminal Area	100 acres 40.5 hectares
Length of Ship Berth	1300 feet 549 meters
Depth at Dock	40 feet MLW 12 meters MLW
Container Cranes	3 Star 40-ton; 1 Krupp, 45-ton
Crane Capabilities	Height 90 feet) Outreach (133 feet); Tonnage (45 LT)
Equipment	Toploaders (30-ton) 5 Reloaders (8-ton); Forklifts (30-ton 26-ton and 15-ton
Intermodal	Proximity to North Jersey rail yards, 1/2-mile to Greenville Yard Wheeled & stacked. Chassis pool 88 reefer plug slots
Maintenance and Repair	Roadability inspection, Mobile/Chassis container repair vans 10 Chassis repair bays 5 roadability lanes
Computer Access	IBM real-time on-line system





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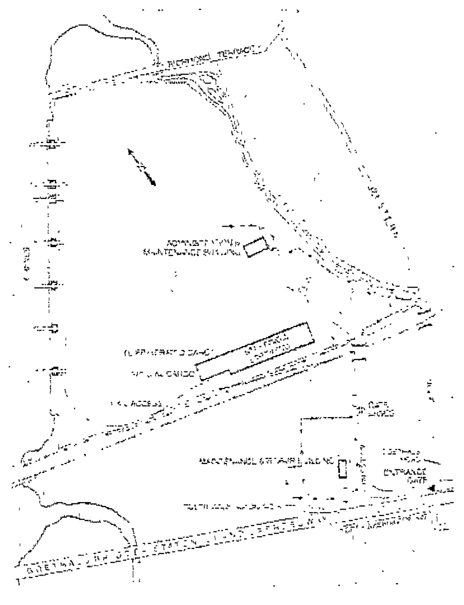
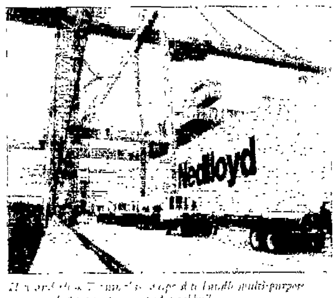
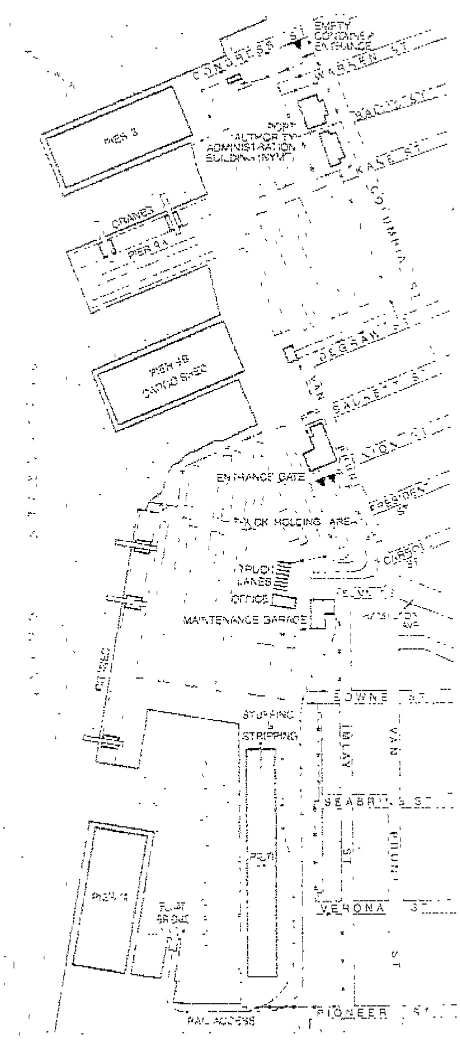
HOWLAND HOOK MARINE TERMINAL

Address	300 Western Avenue Staten Island, NY 10303 (718) 273-7000 (718) 273-7050 FAX		
Entrance Gates	North Washington Avenue & Western Avenue		
Primary Cargo Type	Containers, general cargo, breakbulk		
Terminal Area	187 acres / 75.7 hectares		
Length of Ship Berth	2500 feet / 762 meters		
Depth at Dock	42 feet MLW / 12.8 meters MLW for 2000 feet of berth 37 feet / 11.3 meters MLW for 500 feet of berth		
Container Cranes	4 IHI - 40-ton 2 Paceco - 40-ton 1 Peiner - 50-ton with rotating spreader		
Crane Capabilities	IHI	Paceco	Peiner
Height	75 feet	100 feet	75 feet
Outreach	115 feet	105 feet	106 feet
Tonnage	40 LT	40 LT	50 LT
Equipment	Yard tractors Toploaders, 45-ton Lift-trucks, 13.5-ton to 30-ton Hi-los, 3-ton to 4-ton		
Stuffing & Stripping Facilities	200,000 square feet, includes deep-freeze		
Intermodal	On-dock rail connection within terminal		
Maintenance and Repair	Full maintenance-repair facilities Roadability inspection station 500 reefer plug slots		
Computer Access	On-line integrated terminal control system and fully automated paperless gates		



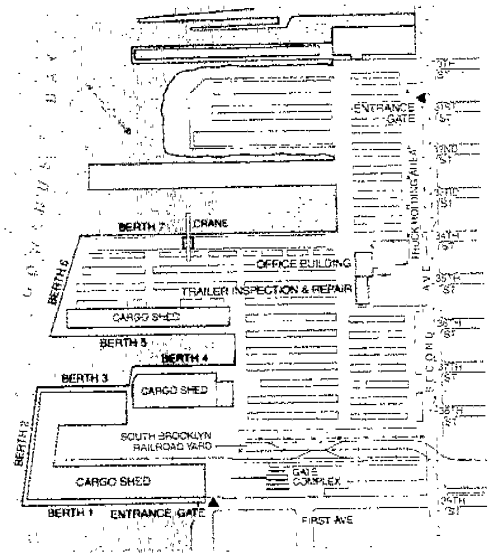


[illegible] to handle multi-purpose [illegible] and breakbulk



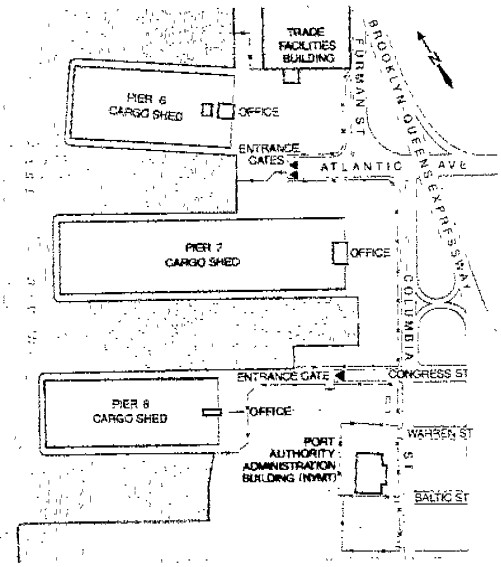
RED HOOK CONTAINER TERMINAL

Address	70 Hamilton Avenue Brooklyn, NY 11231 (718) 875-3717 (718) 643-7201 FAX
Entrance Gates	Hamilton Avenue Empty container entry [illegible] on Congress & Columbia Streets
Primary Cargo Type	Containers, ro/ro, breakbulk
Terminal Area	80 acres 32 hectares
Length of Ship Berth	2,080 feet 634 meters 2140 feet 652 meters breakbulk
Depth at Dock	40 feet MLW 12.8 meters MLW
Container Cranes	2 Paceco 40-ton 1 Star 40 70 ton
Crane Capabilities	Paceco Star
Height	50 feet 62 feet
Outreach	120 feet 335 feet
Tonnage	40 LT 40 LT
Equipment	Fork-lifts 15 – 26-ton with hustlers Straddle carriers Toploaders, 45-ton Front-end loaders Super handlers (22-45 t)
Stuffing & Stripping Facilities	345,000 square feet
Special Facilities	Fumigation facility
Intermodal	Float dock connection with the Cross Harbor Railroad Wheeled & stacked chassis pool
Maintenance and Repair	Terminal served by mobile units 150 reefer plug slots
Computer Access	BMI on-line system



SOUTH BROOKLYN MARINE TERMINAL

Address	39th Street Brooklyn, NY 11219
Contact	New York City Economic Development Corp 110 William St New York, NY 10038 (212) 312-3252 (212) 312-3916 FAX
Entrance Gates	Second Avenue & 31st Street and 39th Street
Primary Cargo Type	ro/ro breakbulk
Terminal Area	110 acres / 45 hectares
Length of Ship Berth	6135 ft / 1870 meters breakbulk
Depth at Dock	27 feet MLW / 8.2 meters MLW
Shed Space	600 000 square feet



BROOKLYN MARINE TERMINAL, PIERS 6–8

Address	90 Columbia Street Brooklyn, NY 11201 (718) 330-2950 (718) 858-3618 FAX
Entrance Gates	Foot of Atlantic Ave.
Primary Cargo Type	Breakbulk
Terminal Area	16 acres / 6 hectares
Length of Ship Berth	5300 ft / 1792 meters
Depth at Dock	32 feet MLW / 10 meters MLW

PORT SERVICES

Putting The World Within Your Reach.

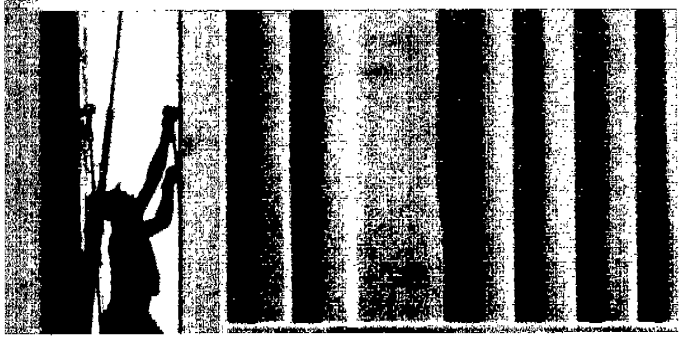
No matter where in the world you're based, the Port Authority's network of professional international and domestic sales representatives are strategically organized to provide you with invaluable assistance.

As a customer, you get more than quality handling capabilities, a dependable labor force, and expert transportation services at the Port. You get access to Port Authority specialists who can help you with everything from real estate for manufacturing plants and office space for corporate headquarters to the benefits offered by locating in a Foreign-Trade Zone.

Considering the tremendous scope of sea, land and air services available through the Port Authority and Port of New York & New Jersey, the word "shipping" seems rather limited. Today, you need a total transportation resource, a trusted partner who will deliver comprehensive services, while at the same time actively seeking new and better options to help your business connect and succeed in a global marketplace.

Let the Port of New York & New Jersey put hundreds of years of cargo handling and world trade leadership in motion for you.

Let the Port of New York & New Jersey put hundreds of years of cargo handling and world trade leadership in motion for you.



PORT PERSPECTIVE

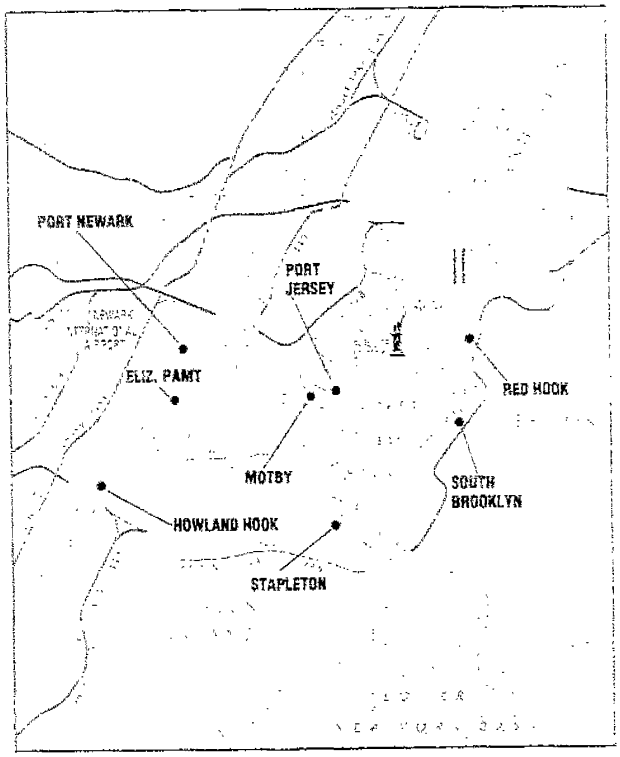
THE PORT AUTHORITY OF NEW YORK & NEW JERSEY

Spring 1999

Port Investment Strategy Unveiled

Regional Discussions Underway

Last year, the Port Authority undertook a Strategic Port Investment Analysis to determine the investments in marine terminal and related infrastructure required to meet the growing amount of international cargo shipped through the Port of New York and New Jersey. The initial phases of the analysis determined two important factors: (1) Cargo volumes in the Port of New York and New Jersey will continue to grow. In fact, even conservative projections show cargo volumes doubling by 2010 and more than quadrupling by 2040. Given these growth rates, port-related jobs within the region could more than double over today's 166,500 total jobs and an additional $30 billion in economic activity will be generated. (2) This level of growth cannot be achieved without adding to the port's existing marine terminals, rail connections and highways. The port's current infrastructure does not have sufficient capacity to meet the expected future demand, even with significantly improved productivity at the terminals. As much as 1,800 acres of new terminal space will be required by 2040. Given this demand, use of existing marine terminal facilities must be maximized and additional facilities must be identified throughout the harbor.



Map of the Port of New York and New Jersey identifying sites under consideration for [illegible] the expansion of existing marine terminal facilities or the construction of new marine terminals.

The analysis identified the investments required to best use all of the port's infrastructure assets. Specific sites for both the expansion of existing facilities and the construction of new marine terminals were identified. The study has considered expansion opportunities for the Howland Hook Marine Terminal in Staten Island, the Port Newark/Elizabeth Marine Terminal Complex, Port Jersey in Bayonne/Jersey City, and the Red Hook Container Terminal in Brooklyn. Potential sites identified for new

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The Options For Port Development

The Strategic Port Investment Options Analysis was initiated to determine the port infrastructure investments that will be necessary in light of forecasted growth in worldwide trade over the next forty years. Expanding the port's terminal facilities to accommodate this growth is a primary goal of the study. The map on page 1 identifies the sites being considered for expansion including both existing terminals (Red Hook, Howland Hook, Port Jersey, Port Newark/Elizabeth) and areas where new terminals would need to be constructed (Military Ocean Terminal-Bayonne and South Brooklyn).

Harbor Depths

A significant factor in determining the additional capacity needed in the port is the depth of channels in the harbor. The largest container ships now in service around the world need water depths of 50 feet or more when fully loaded. If the Port of New York and New Jersey can accommodate these larger ships it can move more cargo. A 50-foot channel in the harbor could translate into an additional 2 to 3 million containers of cargo (as measured in twenty-foot equivalent units) compared to a 45-foot harbor. The additional activity translates into greater need for facilities to accommodate the cargo as well as more jobs and more economic activity. The options considered in the study vary depending upon available depths in the harbor.

Related Transportation Investments

The analysis recognizes that marine terminal development does not happen in isolation. In order to be successful, these options must be incorporated into both existing and expanded transportation

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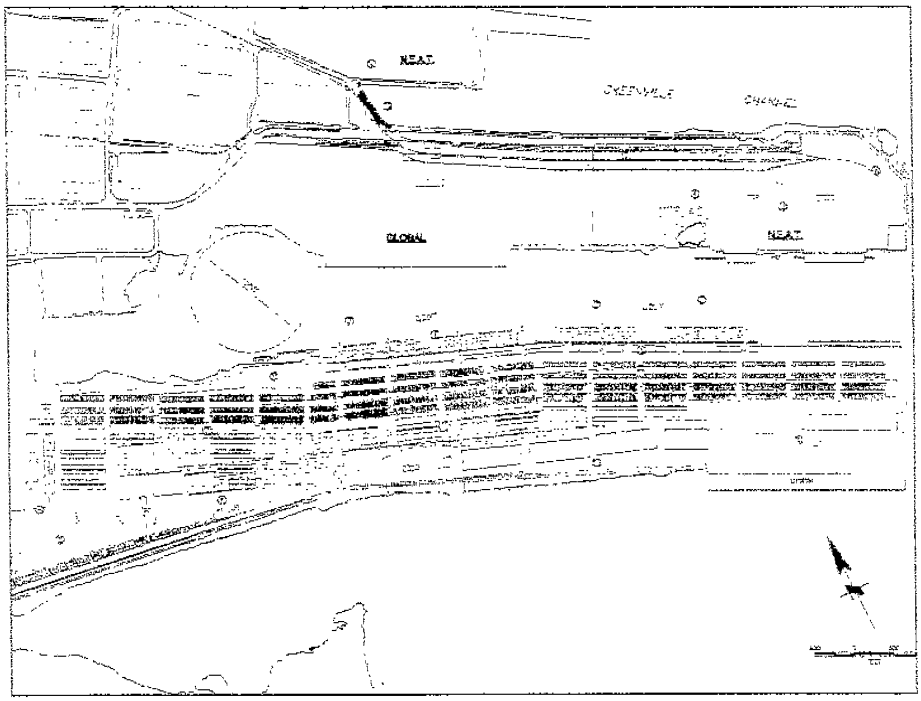

Figure 1: Conceptual Design of Marine Terminal Development at the Military Ocean Terminal-Bayonne

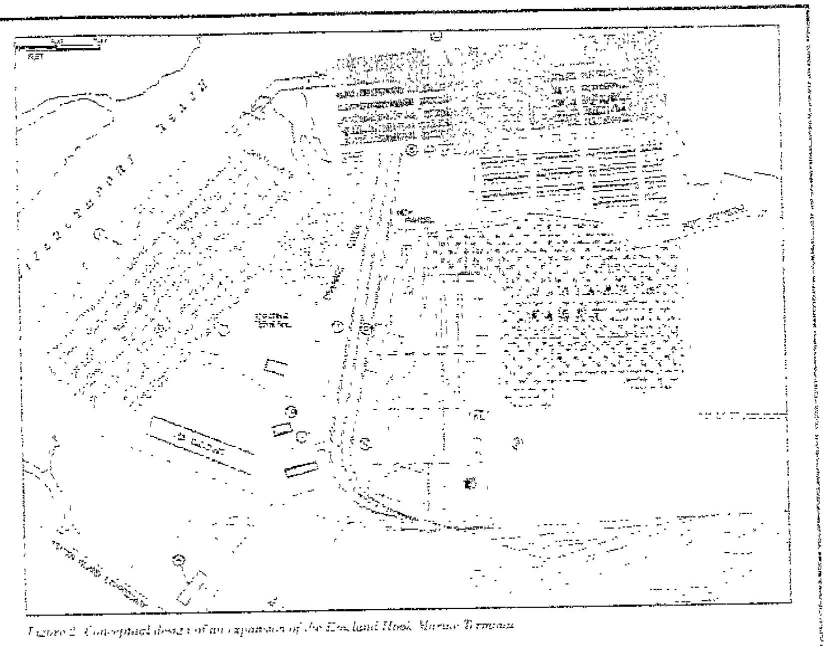

Figure 2. Conceptual design of an expansion of the Howland Hook Marine Terminal

systems, including highways, rail lines and some transportation links with [illegible] and [illegible] services. Each of the options [illegible] represent only one aspect of port development. The Port Authority is closely coordinating with other transportation agencies in the region, including the departments of transportation in New York State and New Jersey, to ensure that the transportation requirements of expanded port growth [illegible] future transportation needs in the region.

Environmental Responsibility

Marine terminals by their very nature are [illegible]. Therefore, development of marine terminals must be based on [illegible] and be sensitive to the marine environment. The original design [illegible] with [illegible]. Before considering expanding [illegible] new terminals, intensive efforts [illegible] to increase productivity [illegible] the plan proposes [illegible] from 1,500 containers per acre per year to 3,500 containers per acre per year by 2010. However, given projected growth in cargo volumes, the port will still need additional marine terminal capacity. Available land resources are limited along the harbor's waterfront, however. Therefore, to create additional capacity it will be necessary to create new land. Creating this new land will require the filling of areas adjacent to other existing terminals or at areas where new terminals would be built. The use of dredged material for [illegible] land fills presents an opportunity to address [illegible] issues [illegible] the harbor. It provides another alternative for the disposal of dredged material while creating additional acreage to expand the port's marine terminal capacity.

Recognizing the impact of these activities, the investment analysis includes discussions of possible environmental mitigation strategies that could be employed. The first approach is to maximize existing capacity [illegible] areas where land already exists and only when those alternatives are not feasible [illegible] create new land. To compensate for expanding [illegible], the analysis proposes [illegible] measures, including the improvement or creation of new wetlands [illegible] and fish and wildlife habitats.

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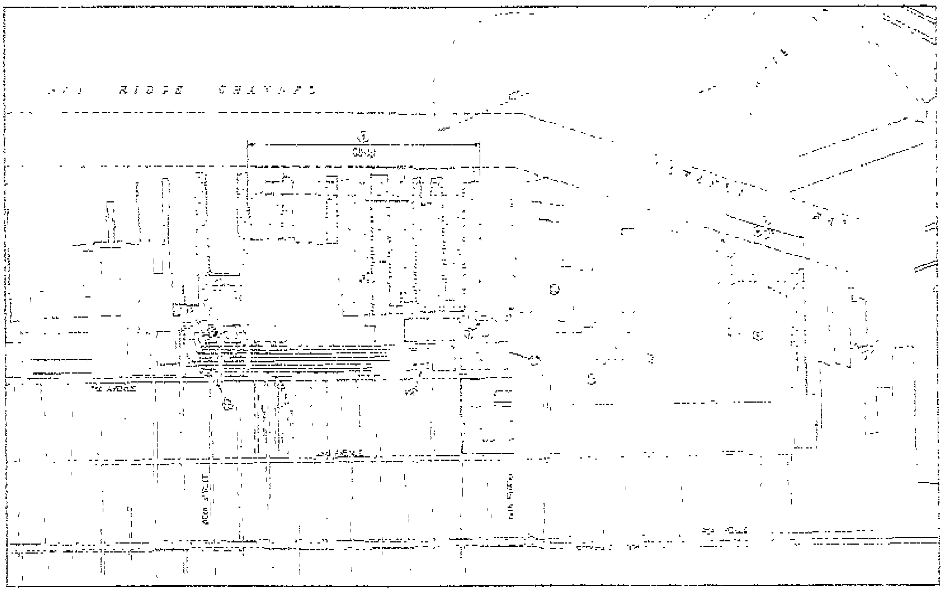

Figure [illegible] Conceptual Design of a General Cargo Terminal along the [illegible] container terminals.

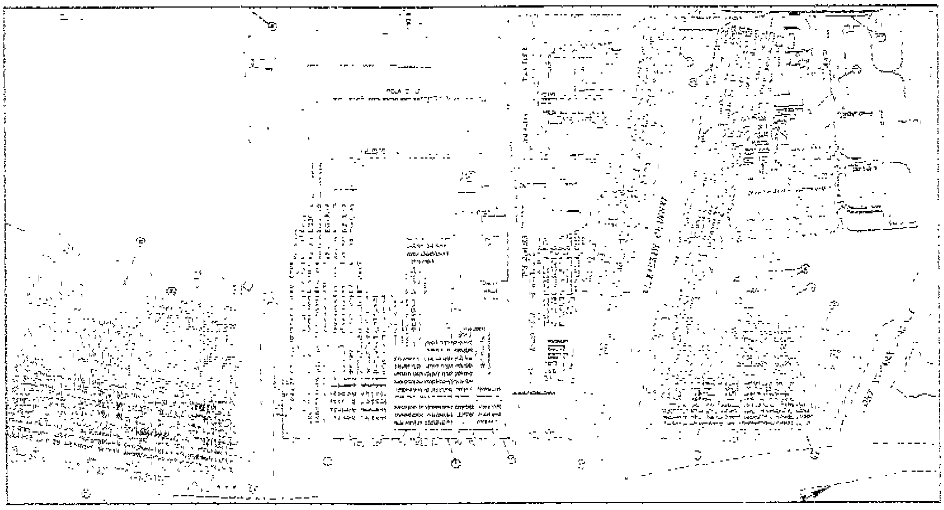

Figure [illegible] Conceptual Design of Expansion of the Port Newark/Elizabeth-Port Authority Marine Terminal

The Port Authority will continue discussions with environmental agencies and environmental interest groups to identify environmental concerns and solutions.

A key consideration in the options analysis is the impact on the environment if marine terminal expansion did not occur at the port. The result would be that ships would be diverted to other ports and the cargo bound for the New York/New Jersey area would have to come to the area by some other means, primarily by rail or truck. Transporting this high volume of goods by these other modes of transportation would create additional impacts on the environment, including air quality, congestion on roadways and an overall adverse impact on quality of life.

Regional Economic Impacts

The port and the activity it generates play a fundamental role in the regional economy. Today, the port supports 166,390 jobs and generates $20 billion in economic activity. The projected growth in maritime activity promises even more benefits for the region including an additional 23[illegible] jobs and another $30 billion in economic activity. But these benefits can only be realized if the port has sufficient facilities in place to capture this trade.

Public Access

Public access to the waterfront remains an important component of the redevelopment effort. The study recognizes that these new investments present opportunities to bring the public closer to the waterfront to both enjoy this unique experience in our region and to learn about the port and its activities. The options presented have begun to identify some waterfront public access opportunities. One goal of the next phase of discussions is to solicit reactions from community leaders and civic organizations with their recommendations for public access opportunities so as to incorporate them into future port plans.

Phasing of Major Terminal Investments: 1999 through 2008

A key philosophy in the investment analysis has been that new terminal capacity should be brought on-line only when there is sufficient market demand. Excess capacity limits the port's ability to recover its costs. Therefore, the timing for new terminal capacity has been tied to the market forecast. Before constructing/adding new terminal capacity, over the next five years the Port Authority will seek to maximize current capacity in the harbor by making $[illegible] billion in new investments in existing facilities. But even with maximizing all existing resources, forecasts project that the port will run out of capacity by 2005. Therefore, new capacity must be in place within the next five to six years. Given the lead time it takes to obtain the necessary approvals and to actually construct new marine terminal facilities, work must begin soon to meet this timetable.

The analysis considers the following investments over the next ten years:

Military Ocean Terminal/Bayonne/Port Jersey — The study recognizes the opportunity presented in seeking new uses for the former Military Ocean Terminal in Bayonne. The Bayonne Local Reuse Authority is considering a redevelopment plan for the base that provides as much as 200 acres for marine terminal activities. (See Figure 5)

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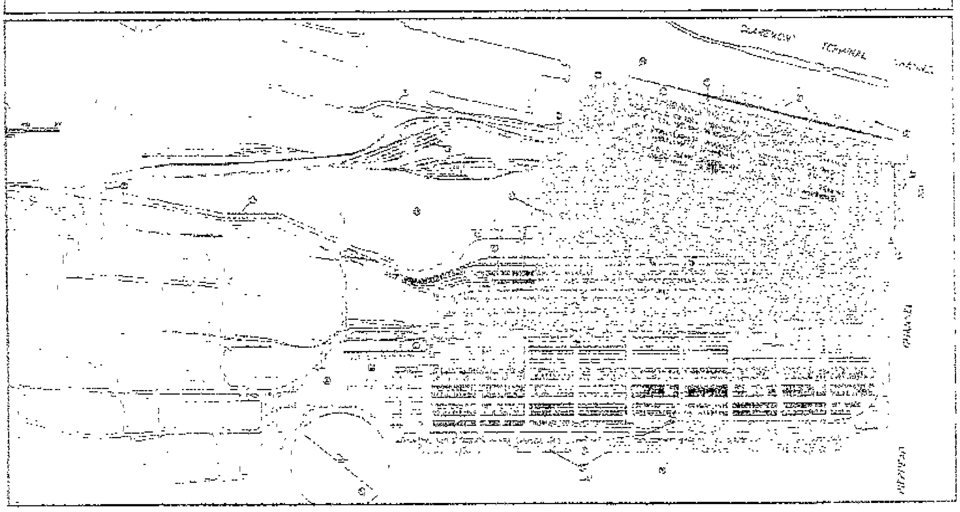


Figure 5: Conceptual Design of Expansion of a Container Terminal at Port Jersey Greenville Yards

In addition, the study identifies an opportunity to expand the existing Global Marine Terminal in Port Jersey into part of the Auto Marine Terminal. However, first a new location would have to be identified for the handling of the import/export automobiles and other vehicles. The first phase of terminal expansion would require $650 million in investment and could be completed by 2005.

Howland Hook—The proposed expansion at Howland Hook includes expanding the existing facility by approximately 200 acres through the development of the adjacent Procter & Gamble property and creating new land via fill in areas north of Richmond Terrace. The expanded facility would include a new rail yard linked to the Staten Island Railroad (See Figure 2). This expansion would cost approximately $650 million and would require a number of approvals, including environmental permits. Given these added requirements, it is anticipated that the expansion would be available by 2006.

South Brooklyn—The South Brooklyn Marine Terminal (SBMT) is a 110-acre facility located at 39th Street in the Sunset Park community in Brooklyn. Although once an active container terminal, today it is primarily a break bulk handling facility. SBMT would serve as the anchor for future marine terminal development along the South Brooklyn waterfront. Given the landside transportation constraints in the area, the options under consideration for South Brooklyn contemplate a phased development that expands as both market demand and transportation linkages (including the proposed cross harbor rail tunnel) become available. The option shown in Figure 3 is a first phase 95 acre terminal, which would require filling inter-pier areas from 39th to 19th Streets. The terminal could first be used as a general cargo marine terminal/roads distribution facility and later converted to a container terminal once landside transportation issues have been resolved. This expansion would require $580 million in investments. The facility would be operational in 2016, after completing permitting requirements, extensive landfilling of inter-pier areas and terminal construction.

These three projects, MOTBY Port Jersey, Howland Hook and South Brooklyn, would have a tremendous economic impact on the region. By 2003, the port would handle approximately 5.4 million containers (as measured in twenty-foot equivalent units), adding another 37,000 jobs and generating an additional $7 billion to the regional economy.

Terminal Investments Beyond 2008

Looking beyond the next ten years, the analysis has put a menu of possible investment opportunities that could be pursued as market demand dictates. No specific timetable of when these investments would be constructed is provided. Cost estimates include terminal development, dredging and mitigation. The options include:

Port Newark/Elizabeth—The analysis provides expansion opportunities at both Port Newark and in areas adjacent to the Elizabeth Port Authority Marine Terminal. At Port Newark, there is an opportunity to create approximately 200 acres of new land and berthing areas by extending the existing Newark peninsula east to the Elizabeth Channel over the existing Newark Bay Confined Disposal facility. This would require a $1.1 billion investment. The Elizabeth expansion would be 400 acres of new land built off the Allied Signal property adjacent to the Elizabeth peninsula. (Figure 4 shows conceptual drawings of both the Port Newark and Elizabeth expansions.) This would require $1.5 billion in investment. Given the need to create new land by building into the waters of Newark Bay, extensive environmental reviews and approvals would be required. Both of these options will also require related transportation projects such as improvements to access roads into the terminals, and rail improvements, including improved access to the existing Express Rail facility.

Port Jersey—The analysis identifies additional expansion areas in the Greenville/Bayonne vicinity of Port Jersey/Jersey City. An additional 300 acres could be added to the Port Jersey area at a cost of approximately $1 billion. (See Figure 5.) Again, environmental approvals would be required for landfilling activities.

South Brooklyn—Assuming South Brooklyn's transportation issues have been resolved, and the marine terminal developed during the 1999-2015 time period was converted for container terminal activities, opportunities exist for further expansion of this site. An additional 200 acres could be created at a cost of $600 million.

These longer term projects, if constructed, present even greater economic benefit for the region. By 2020, the region could benefit from an additional 129,000 jobs and $18 billion more in economic activity, and, by 2040, enjoy a growth of 230,000 jobs and $36 billion in additional economic activity. At the same time, these investments will help the regional economy by lowering transportation costs, which will result in lower costs to the region's businesses and consumers.

Financing

The analysis makes no assumptions about how the various investments will be financed. The expectation is that various public and private partnerships will be forged to proceed with the projects. This could include financial contributions from various municipalities, the two states, as well as the Port Authority. Private sector participation will also be key to further development of these initiatives.

Multiple Studies Plot Port's Future

The Port Authority is not alone in undertaking studies to plan for the future of the Port of New York and New Jersey. In fact, several studies are underway. Two deal with address facilities related to the port and others are focused on transportation and infrastructure projects that connect port facilities to the region. Here is a brief overview of the various studies and how they relate to the Port Authority's port investment analysis.

New York City Economic Development Corporation Strategic Plan for the Redevelopment of the Port of New York

The study is examining sites on the New York City side of the harbor to maximize the role of New York in the Port of New York and New Jersey. This study is limited to examining sites in Brooklyn and Staten Island. Specifically, the study is examining opportunities for expanding the existing Howland Hook Marine Terminal, optimizing the existing Red Hook Container Terminal, and considering a new marine terminal facility along the South Brooklyn waterfront. The study is essentially complete.

The Port Authority has been cooperating with the New York City Economic Development Corporation initiative. The two agencies agreed to use a common data base on cargo projections and forecasts for the port and have been sharing findings from our respective studies.

U.S. Army Corps of Engineers Harbor Navigation Study

In 1996, the U.S. Congress called upon the Army Corps of Engineers to undertake a study of the entire Port of New York and New Jersey to determine which channels in the harbor should be deepened to 50 feet or more. This is the first time that the Corps is studying a port's entire channel system. Normally, the Corps would investigate the deepening of only one channel at a time. The Corps study, scheduled to be completed by the end of 1999, will include an Environmental Impact Study of any channel deepenings in the harbor. The Port Authority and New York City port investment studies will provide critical information to the Corps as to where future terminal expansion is being considered. This will help the Corps determine appropriate depths of channels to serve those facilities. The states of New York and New Jersey, the Port Authority and the New York City Economic Development Corporation are providing support and advice to the Harbor Navigation Study.

Cross Harbor Freight Major Investment Study

The NY City Economic Development Corporation is also studying ways to improve the movement of freight across New York Harbor. The study will include an analysis of a possible cross harbor freight tunnel. It will also consider short options such as improved freight rail operations. This study will be completed in 2000. Findings from this study are critically important for the long term implications for freight movement in the region and will help to determine the extent to which the proposed South Brooklyn waterfront can be developed for marine terminal use.

Other Studies

Agencies and municipalities throughout the region are engaged in various studies to plan for the future. Union County, NJ has undertaken a port study, Jersey City, NJ is in the midst of a Master Plan initiative for their entire city, and the New York State Department of Transportation is studying projects for the Gowanus Expressway and the Staten Island Expressway. All of these studies, to one extent or another, will have major impacts on the region. The Port Authority is working closely with each of these agencies and municipalities to be sure there is a coordinated effort in planning for our region's future.

To Learn More

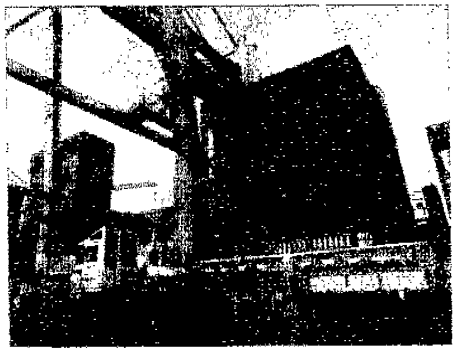
For more information about other studies underway related to the Port of New York and New Jersey contact the following individuals and agencies:

Strategic Plan for the Redevelopment of the Port of New York
— Andrew Genn, NYCEDC, (212) 510-5000

Harbor Navigation Study
— Thomas Shea, US Army Corps of Engineers

Cross Harbor Freight Movement Study
— Alice Cheng, NYCEDC, (212) 619-5000

Union County Port Master Plan
— Ron Weering, Union County (908) 654-9408



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terminals were the Sunset Park waterfront in South Brooklyn and the recently closed Military Ocean Terminal in Bayonne (See map on page 1.)

Each of these sites were analyzed based on its opportunities and constraints for marine terminal development. The primary evaluations criteria were regional economic benefits, financial feasibility, water depth, inland access, environmental impacts, and estimated permitting and construction times. Transportation linkages to the marine terminal sites were as equally important. Available highway and rail access to the sites are critically important to the ultimate success of a terminal development.

Sensitivity to environmental impacts is another critically important consideration in the analysis. Every effort will be made to maximize existing marine terminals and take advantage of existing waterfront properties. But given the projected growth in cargo for the port, additional capacity will be required. Given the limited available land for this type of development in the harbor, it is necessary to consider creating new land by landfilling in areas adjacent to existing marine terminals and/or new terminal development sites. This new land could be created by making beneficial re-use of material dredged from the harbor's channels and berths as fill. Thus, the harbor will provide other disposal options for dredged material, while creating new land for expanded marine terminal operations. The analysis recognizes, however, that there must be a mitigation plan for the environmental impacts of landfilling projects.

Efforts are underway to explore opportunities for mitigation including creating or improving wetland areas throughout the harbor.

Results of the analysis include conceptual designs for marine terminal developments at each site. A discussion of these design options is the focus of this issue of Port Perspective. We are seeking reaction and input about these development proposals from the region's stakeholders, including elected officials, regulatory and government agencies, community and environmental groups, regional planners, business and maritime industry representatives. These comments will be considered as we move to finalize the set of investment recommendations to be included in the summary report of the Strategic Port Investment Analysis.

Vice President Supports Deepening Efforts

Vice President Al Gore visited the Port of New York and New Jersey in January to witness the signing of an agreement between the Port Authority and the Army Corps of Engineers to begin deepening the Kill Van Kull/Newark Bay channel to 45 feet. At the ceremony, the Vice President announced the Administration's commitment to provide $60 million in the Fiscal Year 2000 budget to keep the deepening project on schedule. The deepening project will begin in the Spring and is scheduled to be completed by 2004.

For More Information About the Port Strategic Investment Options Analysis or Other Port of NY & NJ Issues, Visit Our Web site: www.panynj.gov or Send E-mail to: *dmaynard@pamail.panynj.gov*

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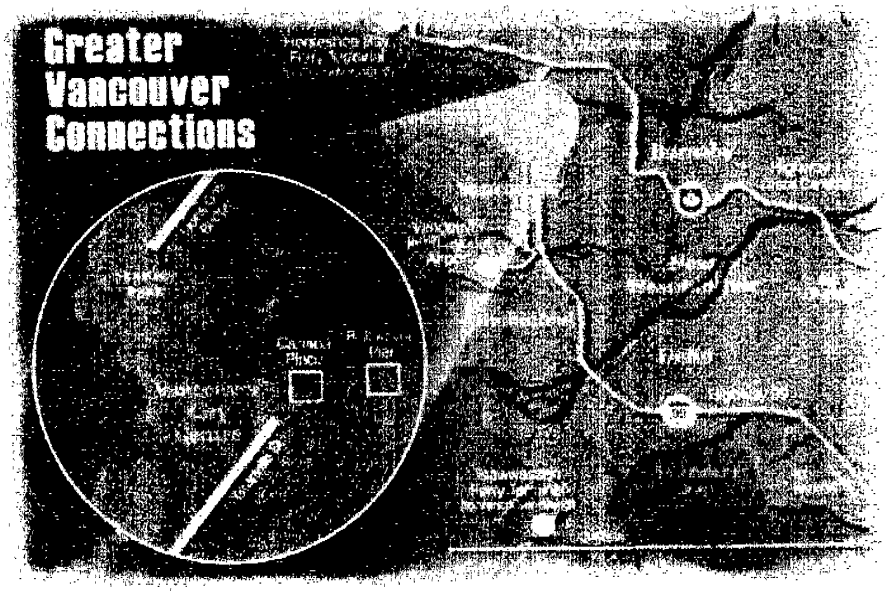

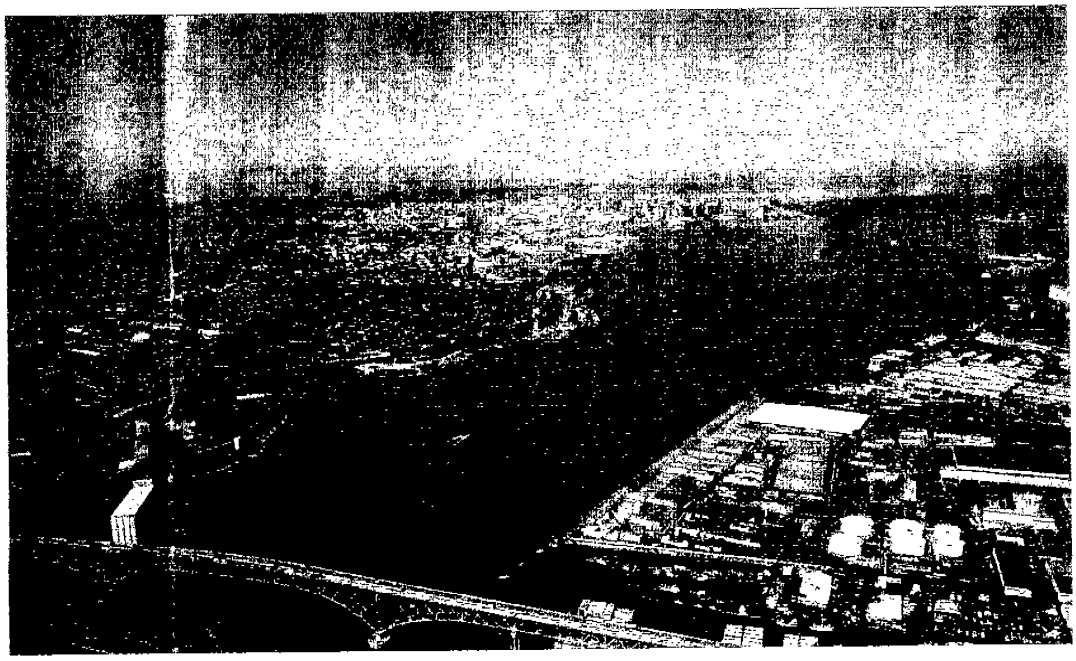

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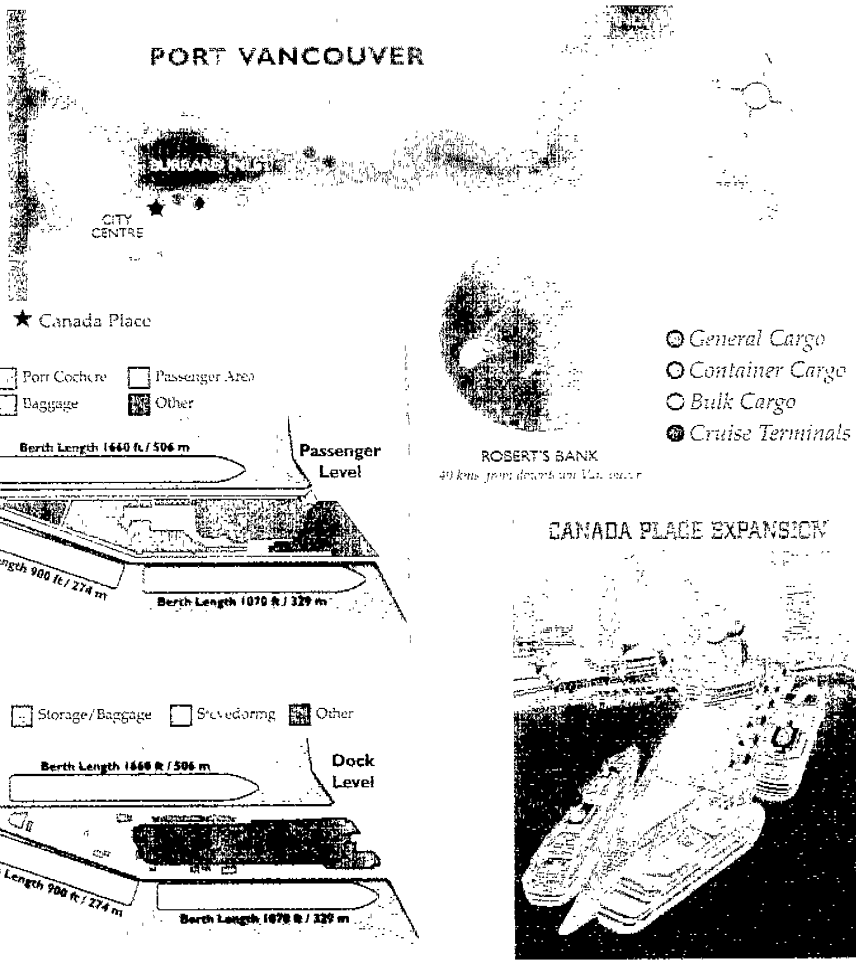

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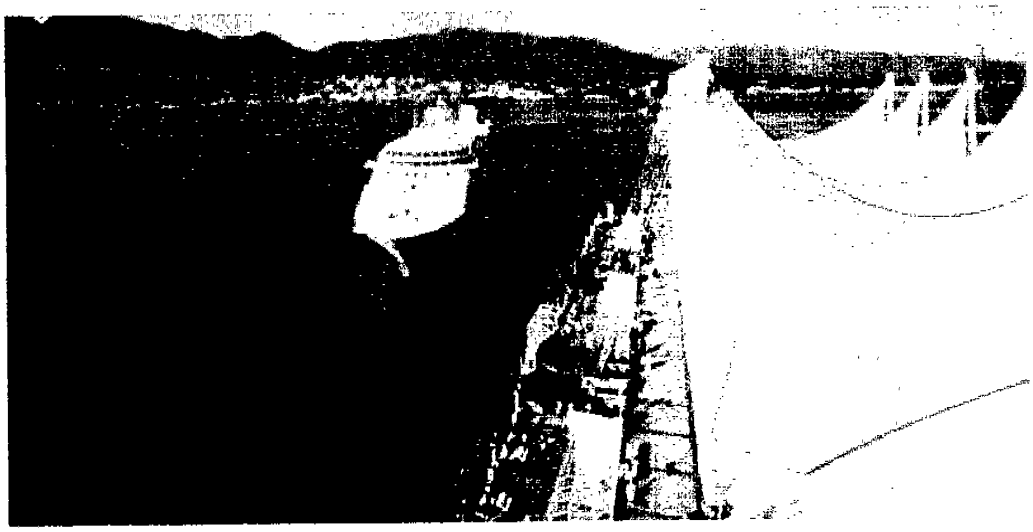

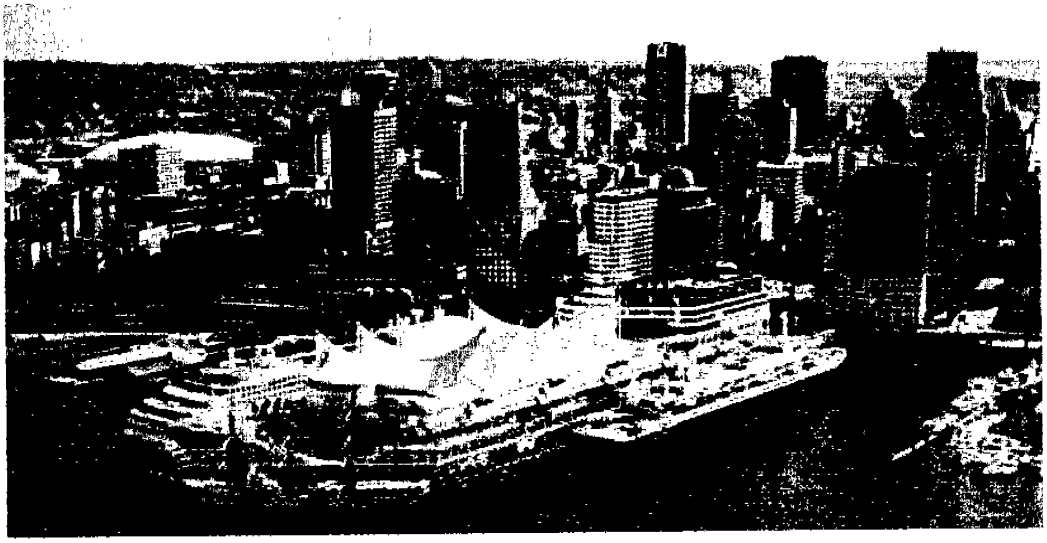

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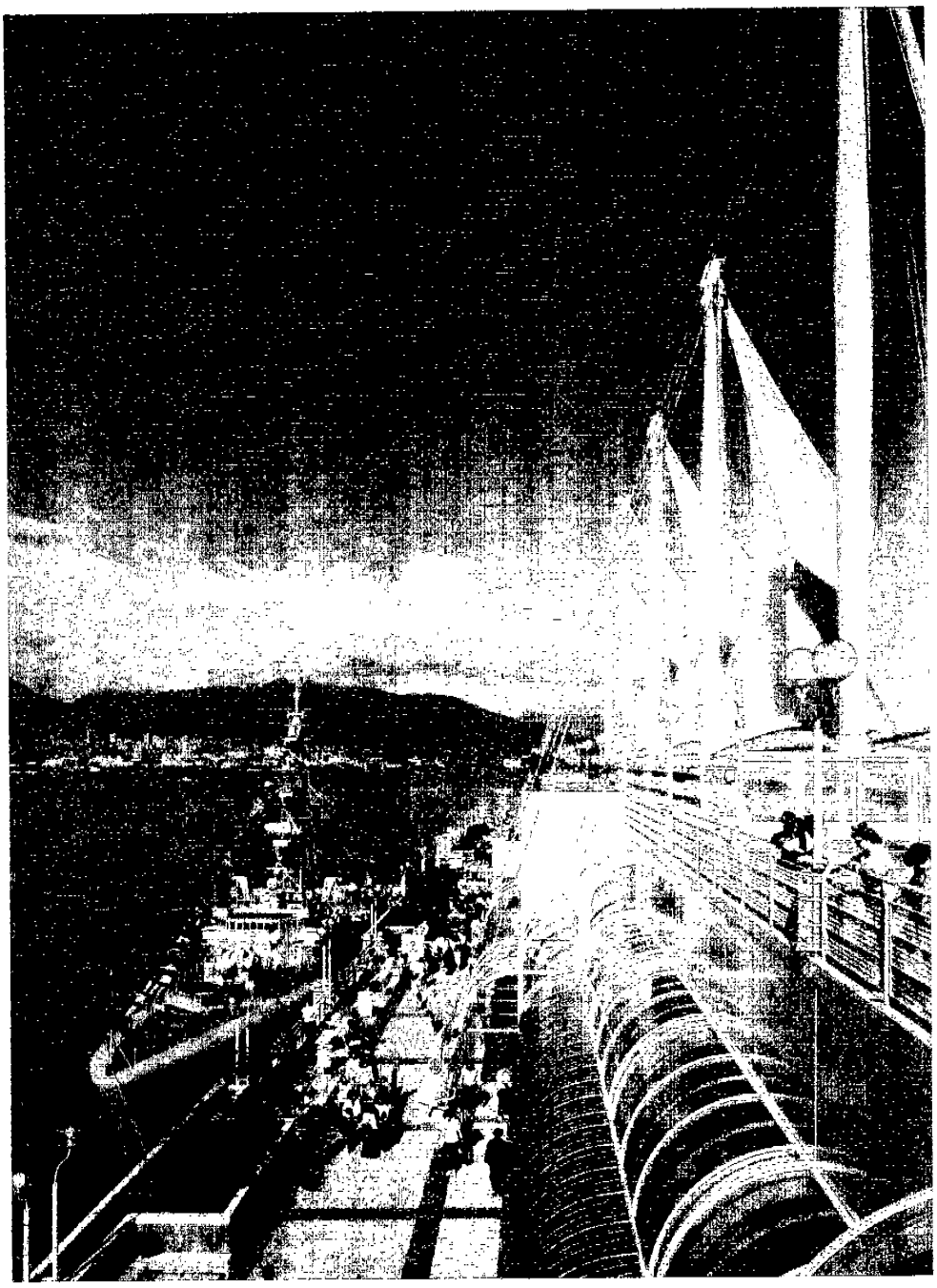

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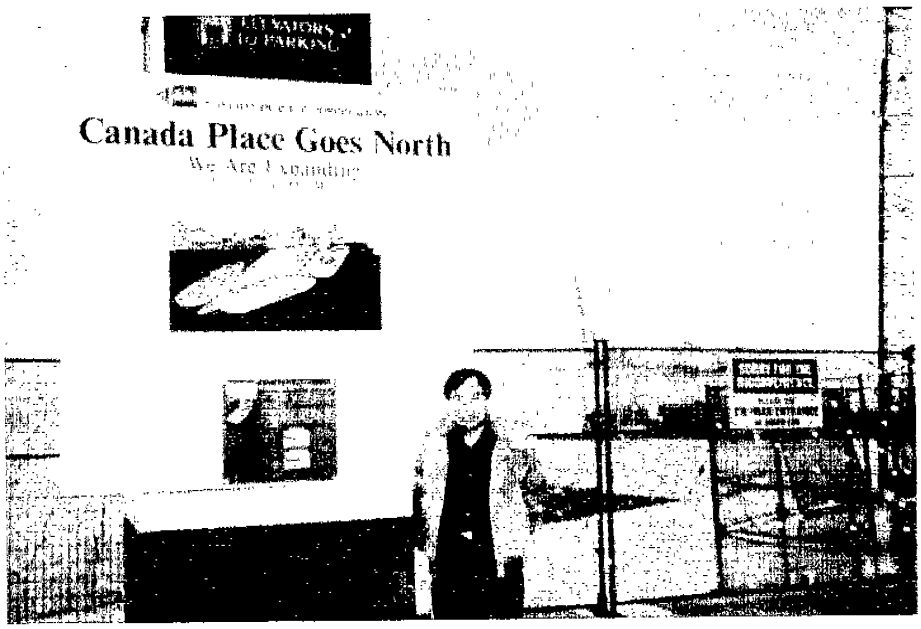

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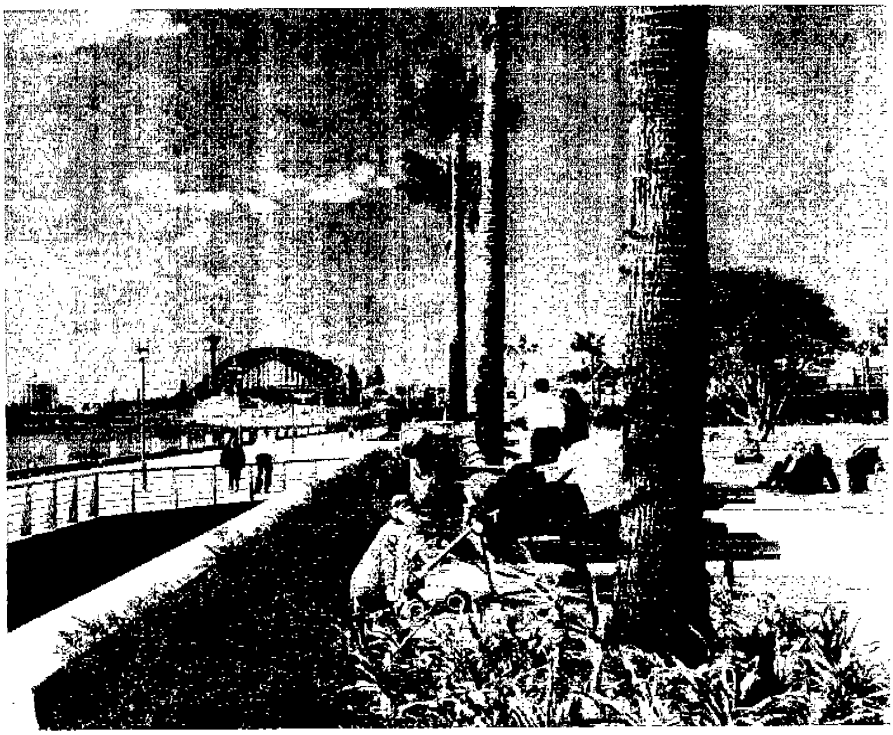

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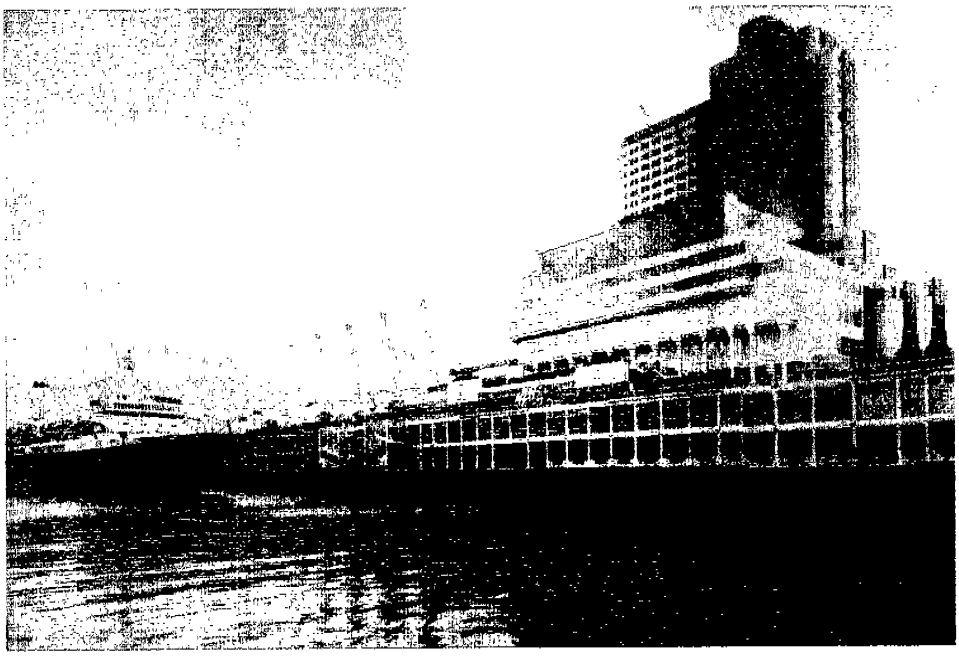

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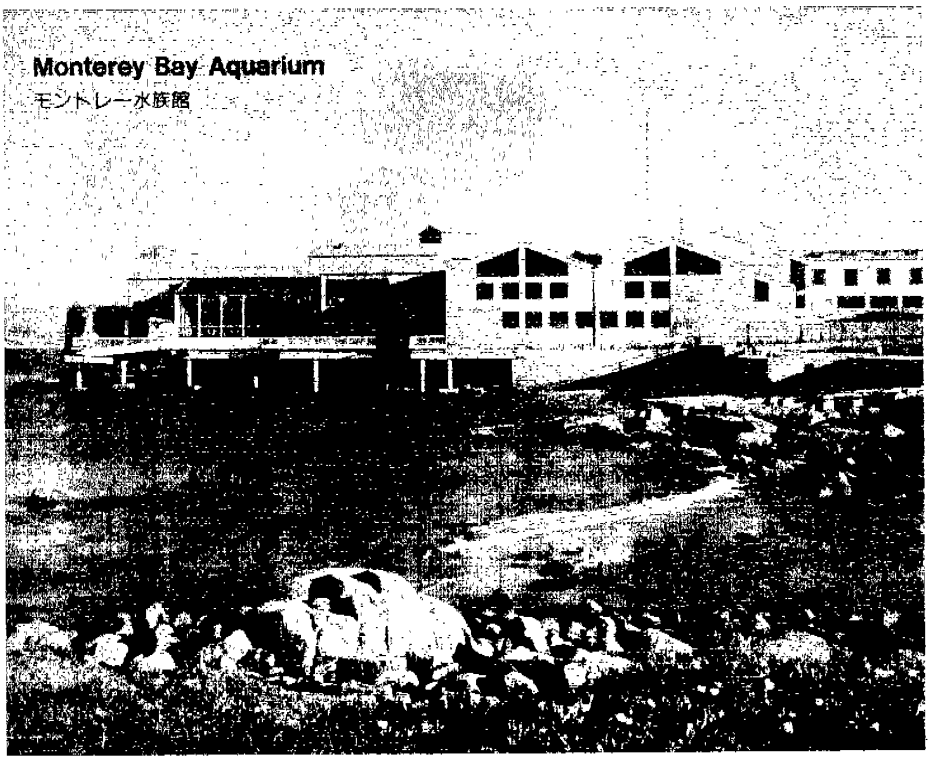

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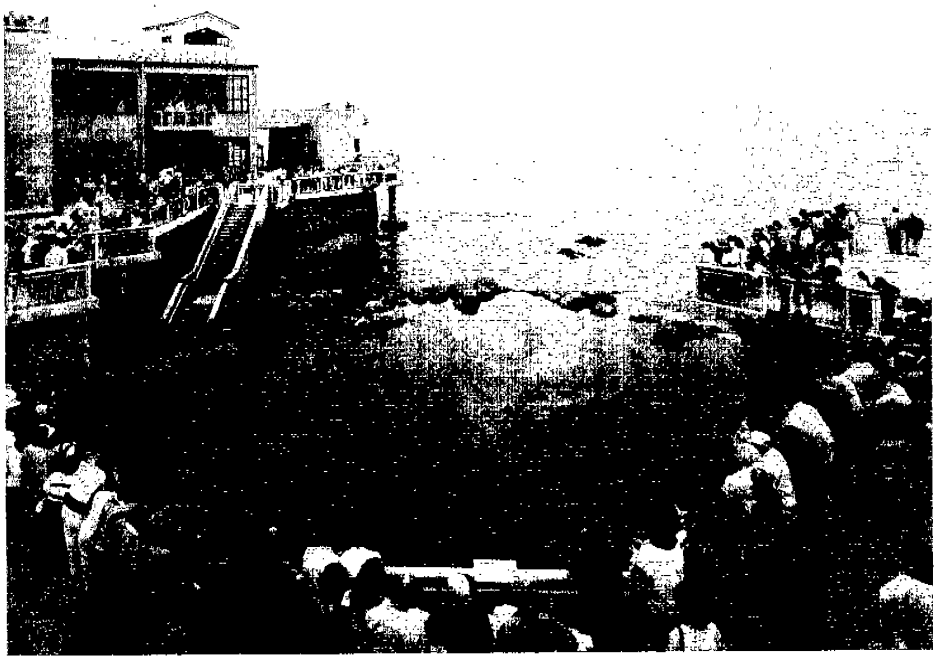

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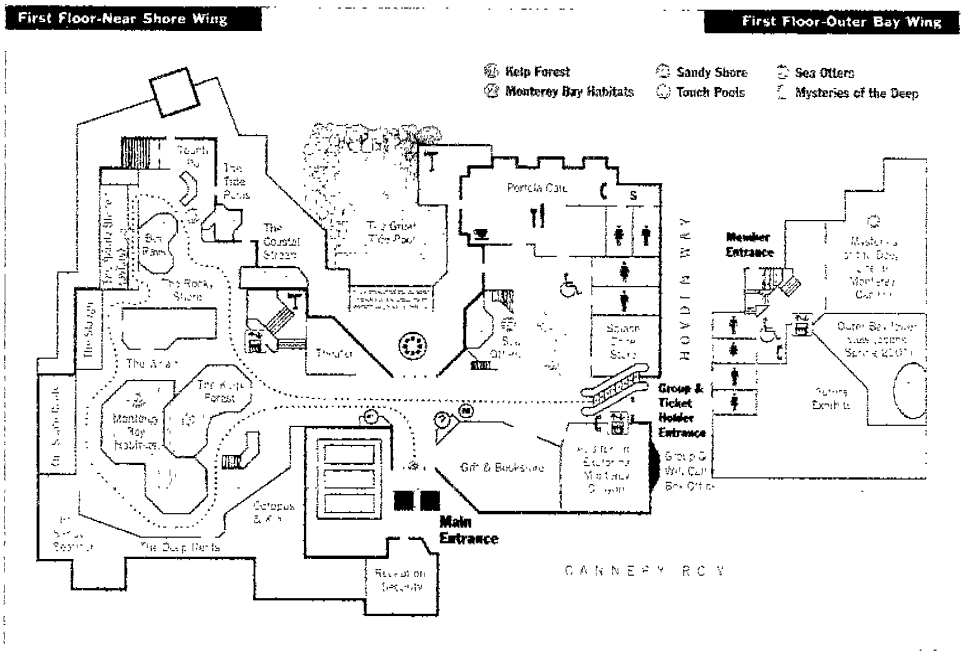

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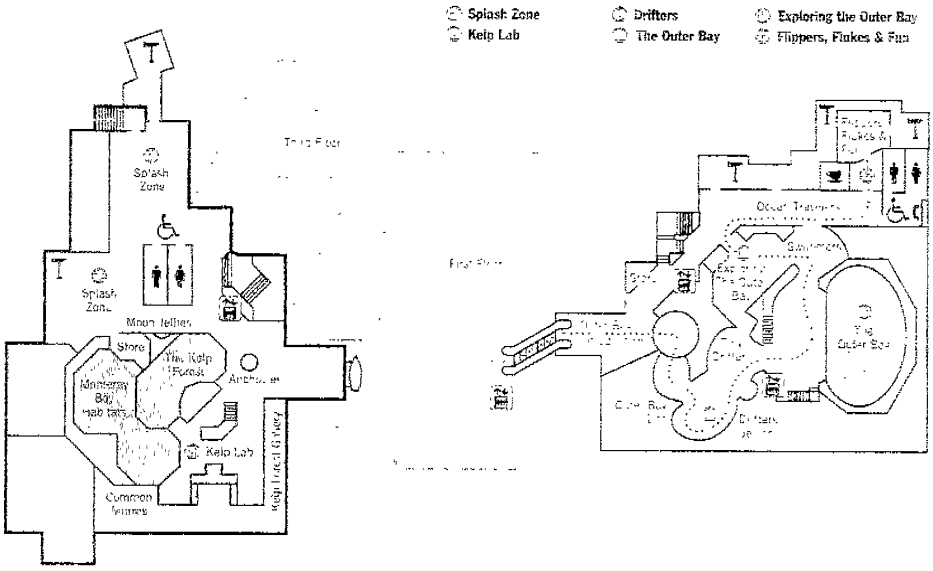

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