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INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

INTERNATIONAL DEVELOPMENT ASSOCIATION

APPRAISAL OF

PORTS PROJECT

NEW ZEALAND

October 28, 1963

Department of Technical Operations

CURRENCY EQUIVALENTS

1 New Zealand Pound	=	U.S. $2.80
1 US Dollar	=	NZ 7s. 2d.

Tonnages of cargo are given throughout in manifest tons, (weight or measurement).

Fiscal Year: October 1 - September 30.

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SUMMARY

i. The Bank has been asked to help finance certain items of a continuing program of modernization and development in New Zealand ports.

ii. Many of the existing port facilities were built long ago and are unsuited to modern requirements. Traffic is expected to increase steadily at a moderate rate. The program consists of measures of modernization and extension needed to provide for the expected traffic efficiently. The project includes various items of the program, all of which will be completed by 1967.

iii. The estimated cost of the project items is £NZ 4.5 million including £NZ 2.8 million (US$ 7.8 million equivalent) in foreign exchange. The loan has been requested to meet the foreign currency cost.

iv. The ports are managed and operated by independent Harbor Boards. The loan would be to the Government which would re-lend to the Boards.

v. The management of the ports is efficient. Operations and maintenance are well conducted.

vi. The past earnings and financial position of most of the Harbor Boards have been good. Financial data recently received indicate that the project boards may be expected to remain in a reasonably sound financial condition.

vii. The project is technically and economically sound. The estimates of the cost are realistic. Procurement procedures proposed are such as to be acceptable to the Bank.

viii. The project is suitable for a Bank Loan of about US$ 7.8 million equivalent. An appropriate term would be 25 years including a period of grace of four years.

NEW ZEALAND
APPRAISAL OF PORTS PROJECT

1. INTRODUCTION

1. The ports of New Zealand are administered by independent Harbor Boards. The Boards have continuing programs of modernization and development of their facilities and the Government has asked the Bank to make a loan of approximately US$7.8 million to meet the foreign currency cost of certain items of these programs currently being carried out. The Borrower will be the Government, which will make the funds available to the Boards. It has already passed legislation empowering it to borrow from IBRD or other international financial agencies and re-lend to the Boards or similar public bodies.

2. Many New Zealand port facilities were built a considerable time ago and are unsuitable for modern requirements. Traffic through the ports is expected to increase steadily at a moderate rate. For the most part, the project comprises measures of modernization and minor extension of facilities required to provide for the expected traffic efficiently, together with the provision and replacement of mechanical handling equipment also necessary for this purpose.

3. This report is based on an appraisal made by a Bank mission which visited New Zealand during October 1962 and data subsequently received.

II. NEW ZEALAND PORTS

A. General

4. New Zealand (Map 1) lies between latitudes 33 and 53 degrees south, separated by 1,200 miles from Australia, its nearest neighbor, and 5,800 miles from the South American continent. Of its total area of 103,736 square miles, 102,374 square miles are made up by the North Island (44,281 square miles) and the South Island (58,093 square miles) which are separated by a strait 15 miles wide.

5. In 1960, the total population was 2.4 million. Although the North Island is the smaller of the two, its population is twice that of the South Island. Animal husbandry, the most important economic activity, is spread fairly evenly over the two islands; but industrial activity is greater in the North Island. The country has, in general, a well developed transportation system.

6. Except along the northwest side of the South Island, the coast of New Zealand is fairly favorable to the establishment of ports and historically these sprang up in advance of land communications, transportation between areas in the earlier stages of development having been by coastal shipping. In 1961 there were 31 recognized ports, of which 19 were used by overseas shipping. (Appendices 1 and 2). Originally most of the latter had adequate natural depths but with the advent of deeper-draft ships artificial deepening was required in a number of cases. The mission visited twelve of the principal ports.

B. Administration

7. The more important ports are operated by invidivual Harbor Boards, of which there are at present 25. Board members are elected by the rate payers (payers of local taxation) of a group of counties approximately co-extensive with the port's service area. Generally speaking, the Boards operate only one port. They enjoy a high degree of autonomy, virtually the only restrictions on their operations being, as described in greater detail below, that approval of the Ministry of Marine, generally automatically given, is required for their charges; and that their borrowing is subject to authorization first by Parliament, and then by the Local Authorities Loans Board (LALB), a statutory body.

8. When initiating a capital project, a Board first submits a bill to Parliament, setting out the nature of the project, its purpose, estimated cost, timing, and operational, financial and economic justification. Parliament then gives or withholds approval in principle to borrow for the scheme. In doing so, it may give powers to levy "rates" (local taxes) for the scheme. The Board then applies to LALB for permission actually to raise the funds, submitting a somewhat amplified version of the earlier application to Parliament. This is examined by the Ministry of Marine (mainly from the navigational standpoint), the Ministry of Works (from the engineering and to some extent economic aspects) and the Ministry of Finance (from the financial aspect and also to some extent the economic). When giving approval, LALB generally does so only for a portion of the borrowing involved, calling upon the Board to submit further application for the remaining stages. Procedure after the giving of LALB approval is mainly formal. The Board must confirm its intention to proceed and the Governor General must issue an Order in Council finally authorizing it to do so. The procedure is carefully and conscientiously followed and the financial control so exercised is effective.

9. Local patriotism plays a great part in the motivation of the Boards. The Board and the general public which elects it are intensely proud of the area in which they live and are determined that it shall be developed. They regard possession of adequate port facilities as of first priority for this purpose. They are prepared to pay for such facilities, either through port charges on the goods they export or import or through local taxation levied to finance port development. Particularly in the intermediate-sized ports it is evident that the system has important virtues. There the Board members are in touch with the detailed needs of the community as regards port transportation to a degree which is unusual, and the alertness and efficiency with which these ports are managed is apparent.

C. Port Facilities

10. The larger ports, Auckland, Wellington, Lyttelton and Otago are in the position familiar in Europe and North America of having "too much inadequate accommodation". While the list of berthage in their handbooks appears impressive, on examination, much of it is found to be unsuitable for

modern requirements because of inadequate length of berth or depth alongside, inadequate approaches and storage area, lack of facilities for road traffic, etc. In the intermediate-sized ports, the principal purpose of which is the export of agricultural produce and the import of fertilizer, etc., the facilities are often simple and inexpensive, comprising plain finger piers, which, although narrow, nevertheless appear well suited to their particular purpose.

11. In all of the principal ports, mechanical appliances are available for handling bulk dry cargo. Pneumatic discharge of cement to an adjacent sacking depot is provided for in several ports and the system is being extended to others. Coal and fertilizer are handled by grab crane into mobile hoppers discharging into road and rail vehicles. An exception is found at Dunedin, where phosphate is handled by conveyor from the ship's hold direct to an adjacent warehouse.

12. In respect of other dry cargo handling facilities a noticeable feature of the ports is the limited extent of transit shed accommodation. In all ports such accommodation is provided on a relatively small scale. The extent to which light handling equipment such as forklifts is provided for dry cargo is also in many cases limited. Generally speaking, the ports which handle substantial ordinary general cargo imports use quay cranes, others relying on the use of ships' gear.

13. As stated above, in certain ports, the depth alongside some of the older berths is unsuited to the increasing proportion of deep draft vessels to be dealt with. However, although in a few cases some limitation exists, the overseas ports are, in general, in a good position to accept vessels of the maximum draft trading in the area. Notable exceptions are Tauranga and Nelson, where bar problems exist. The generally favorable position results from the aggressive dredging policy adopted by the Boards in the past rather than from natural advantages.

III. OPERATIONS

A. Operations

14. Most of the Boards limit their functions to controlling shipping, providing navigational aids, and part or all of the cargo-handling equipment, together with labor to operate it, relying on others to supply wharf labor and stevedores. Exceptions are Napier, Nelson and Wellington, known as "wharfinger" Boards, which supply handling labor on the wharves. In Lyttelton, Port Chalmers, Taranaki and Timaru, where traffic is mainly handled by rail, the Railways Department supplies the wharf labor handling cargo to and from rail.

15. The system of leasing berths to particular shipping companies or of giving them priority at certain berths does not exist. However, in planning accommodation, the Boards intend, and the shipping companies expect, that except under truly exceptional conditions, a berth will always be available for a coastal ship on arrival; and that under normal conditions such will be the case with overseas shipping, policies which are common in North American and European ports.

16. Bulk liquid cargoes, are handled at separate installations in the larger ports but in many of the intermediate and smaller ports at facilities also used for general cargo. Meat, wool and general cargo imports are handled conventionally by quay crane or ships derrick.

17. In general, both export and import cargo is not held in the port areas except to an unusually limited extent; one consequence of this being that, as already described, shed accommodation is provided on a very small scale. The Boards explain this as being due to the nature of the traffic e.g. meat and dairy products which are taken direct from meat works or cold store to the ships' side and to the quick clearance of general cargo imports, customs and other procedures being such that an importer can clear a consignment within three or four hours of its leaving the ship if he is so minded.

B. Labor

18. As explained in paragraph 15 above, in some comparatively few ports the Harbor Board or the Railway Department supply wharf labor. All other wharf labor and all stevedoring labor on ship is provided by the Waterfront Industry Commission (WIC) a statutory body which, in liaison with the unions, produces men as required by the shipping companies, importers, or exporters, pays them and recovers the cost from the user.

19. The WIC labor works on a time basis with a guaranteed weekly wage and incentive arrangements and is completely unionized. Output per hour is satisfactory but over-all output is limited by: (a) shortage of men, a feature met with throughout New Zealand's industrial activity; (b) while the generally permitted maximum working hours (59 hours weekly with the possibility of working up to 10 extra hours when required to finish ships) are fairly high, there is a generally rigid prohibition of night or Sunday work. The Harbor Board and Railway Department wharf labor also works on a time basis with a guaranteed weekly wage, but without incentive schemes, and is completely unionized.

20. Wage rates of Harbor Board, Railway Department and WIC labor are fixed by tribunals operating under the provision of various labor legislation. Disputes are subject to compulsory conciliation and arbitration procedures. Loss of port labor time because of disputes has for many years been light, e.g. in 1961, there was only one dispute involving WIC labor, resulting in the loss of 7,816 man hours.

C. Traffic

21. Total traffic in 1962 amounted to 12.1 million tons of which about two thirds represented overseas movement and one-third coastal (Appendix 1). Of the total, 9.6 million tons were dry cargo and 2.5 million tons bulk petroleum. As shown in Appendix 2, the growth trend over the years 1957-1962, has been uneven. Measured on the basis of the terminal years, growth has averaged annually about 1.5 percent. Traffic during 1962 declined slightly compared with 1961. This is attributed to credit restrictions and import controls in force since 1961, the duration of which is generally expected in New Zealand to be temporary.

22. The general pattern of traffic is that most of the ports load the country's primary produce, such as meat, dairy products, wool and timber, and discharge bulk items such as fertilizer, cement, coal and petroleum. The discharge of general cargo imports is mainly concentrated in the ports of the larger towns, Auckland, Wellington, Lyttelton (Christchurch) and Otago (Dunedin) In these ports, which are the larger ones, traffic fluctuations during the year are comparatively slight; in the smaller ports traffic is more seasonal.

23. The pattern of overseas shipping movements is unusual. About two-thirds of the overseas traffic is carried by a group of British shipping companies generally referred to as the "Overseas Shipping Group" (OSG) operating refrigerated vessels. This group has since been joined by various continental European shipping lines. Collectively they have long-term contracts with the meat, dairy, and fruit produce boards under which they carry all such produce shipped to Great Britain at pre-determined freight rates which are the same for all New Zealand ports and size of consignment. The groups' ships spend a long time in New Zealand waters, during which they call at a considerable number of ports, the average stay in 1961 having been 69½ days and the average number of calls 8.3. The average tonnage of cargo loaded to or discharged from these vessels per ship-day worked was 340.

24. In recent years there has been a tendency for the draft of dry cargo shipping in the New Zealand trade to increase, vessels drawing 30-32½ feet fully laden being now fairly common. Cruise ships, comparatively few in number, have a laden draft as much as 35 feet. The consensus of local opinion is that the mean maximum draft of dry cargo ships is unlikely to increase beyond the present figure, although the proportion of deep draft ships will continue to grow.

D. Operating Efficiency

25. At the time of the appraisal there was a tendency for users to question the efficiency of the ports. Criticism came principally from the OSG shipping group referred to in paragraph 23. The group had complained to the Producers' Boards which are the responsible Government agencies involved that the present system, under which their ships make so many calls often for small consignments, coupled with a slow rate of loading and discharging, is unnecessarily enhancing their costs, and that unless improvement can be effected, a freight increase will be necessary. In response, the Boards appointed a three-man committee to inquire into the matter and have arranged for a similar committee to be set up in the United Kingdom where parallel problems exist. The New Zealand Committees' terms of reference primarily refer to examination of possible economics by palletization, mechanization and all weather loading; in the presentation of cargoes alongside vessels; and by a reduction in the number of ports of call. The Committee has not yet issued its report. Since the appraisal the criticism has to a large degree subsided.

26. The considerations involved in endeavoring to assess the optimum number of ports to be operated for overseas shipping are very complex. In the case of meat, the principal export, loading on to the ship is only one link of the generally well-organized transportation chain, farm - meatworks - ship - UK wholesaler - UK retailer. Changes in one phase of the operation cannot be made without consideration of the effect on other phases. For example, under the present system, the ship, in moving from port to port, provides mobile refrigerated storage. Any appreciable concentration of loading would mean an investment in additional refrigerated storage on land. Similarly, additional land haulage and investment in insulated vehicles would be involved. These additional costs might well outweigh the saving in ship movement achieved. As regards fertilizer, a principal bulk import, the relatively small quantities at present involved at individual ports make it doubtful whether the saving accruing would justify the general installation of conveyor systems. On the other hand, it appears possible that the concentration of fertilizer handling at fewer ports might involve an increased over-all cost because of the additional road haulage to the points at which the aircraft used in agriculture finally pick up their load. In considering the matter it must be borne in mind that the complaints as to the number of ports operated for overseas shipping arise only from the OSG group in respect of their cargo liner traffic. Tramp shipping, and other shipping lines endeavoring to enter the trade, from time to time, may continue to be prepared to call at the small ports for quite small consignments. This will constitute a factor tending to the retention of the use of such smaller ports for overseas shipping.

27. From considerations of the foregoing nature, it is therefore the consensus of opinion among all concerned locally that the maximum extent to which concentration would be feasible would be the closing of such minor ports as Bay of Islands, Wanganui, Picton, and Omaru to overseas shipping and that there is no doubt that Auckland, Bluff, Otago, Lyttelton, Napier, Timaru and Wellington will continue to be operated as ports for overseas dry cargo shipping.

28. As regards the slow rates of loading and discharge complained of, the main underlying cause is undoubtedly the shortage of labor, a shortage, as already explained, common throughout New Zealand's economy. The restrictions as to hours of work described in paragraph 19 are such as are met within many developed countries. The possibility of finding labor with which to increase the number of gangs available is constantly being explored, but no early solution of the problem appears likely.

29. Rates of discharging cased general cargo appear adversely affected by a low degree of palletization having the effect that forklifts are less used than elsewhere and efforts are being made to effect improvement in this respect. As regards principal exports, the further mechanization of the handling of wool would probably offer little advantage. This is not the case with dairy products and meat, where substantial savings arising from increased cleanliness, decreased damage, and the avoidance of interruption because of rain are feasible if full mechanization is achieved. Much attention is being given to the

problem and an all-weather meat loading installation, the first of its type in the world is now being installed at Bluff. Timaru has a firm proposal for such a loader and other Boards are likely to follow suit.

30. In considering the rates of discharge and loading it must be borne in mind that direct loss other than ships' time has not been involved to any great extent. Apart from the somewhat low degree of mechanization referred to above, cargo is efficiently handled, congestion at the wharves is rare, generally only occurring when unusual circumstances, such as the imposition or removal of import restrictions, lead to artificial peaking. During visits to twelve ports the mission saw no instance of wharf or shed congestion.

31. In examining statistics of the traffic handled in the ports, it is necessary to take a number of factors into consideration which affect throughput as follows: the general stringency of labor supply described in paragraphs 19 and 28; the obsolete layout of much of the accommodation as described in paragraph 10; the policy adopted as regards berth availability as described in paragraph 15 and the small number of berths at some ports; the nature of the cargo which is often relatively light and bulky, and the lack of modern facilities at some of the intermediate-sized ports. Bearing these factors in mind, the annual amounts handled per berth are comparable with figures achieved under like circumstances in Europe and North America.

IV. FINANCES AND EARNINGS

A. Budgets, Accounting and Auditing

32. The various Harbor Boards of New Zealand are entirely responsible for their own operating budgets, and for their capital budgets except to the extent they involve borrowing money.

33. The accounting systems of each Harbor Board are similar in major respects. They have the principal aspects of commercial accounts - operating expenses include depreciation on a declining balance basis related to reasonable service lives of depreciable assets, but proprietorship accounts represent only investment of internally-generated funds. Aspects of Government accounting include: (a) the establishment of a multiplicity of funds expressly authorized by law, for special purposes; (b) the establishment of Special Rates Trust Accounts which are: (i) fed by total local taxes levied and any interest earned on loan money invested; and (ii) reduced by unavailable local taxes which have been either written off or rebated and by transfers equivalent to the charge for interest, for payments to sinking fund or repayment of the loan in respect of which the special tax was levied. The accounts are kept in a manner adequate to a determination of the earnings and financial position of each Board.

34. Auditing is performed for all Local Authorities including Harbor Boards, by the Audit Office of the Controller and Auditor General in accordance with Section 88 of the Public Revenues Act, 1953.

B. Rate Structure

35. Rates and charges are established by each Harbor Board under powers

granted by the "Harbours Act - 1950". As described in paragraph 7, they are subject to the approval of the Minister of Marine.

36. Tariffs are generally simple, inasmuch as most of the Boards provide the wharfinger facilities for others to operate in the exchange of persons and property between water and land carriage. The principal charges are for pilotage, port use, berthage, rents and hire of equipment. Most of these charges appear to be reasonable for the service involved although the sum of total charges in some instances is on the low side.

C. Earnings

37. Every Harbor Board is required to provide for its ordinary obligations in any year from the revenue of that year. Revenue is defined as all money receivable other than the proceeds of loans and thus, includes local taxes in some instances when they are levied on the port's behalf. (See paragraph 39 below).

38. Earnings are affected in most cases by non-operating income, the specific nature and significance of which varies from Board to Board, but generally appears to average about 10%-20% of gross revenue. Such income includes amounts obtained as local taxes levied and collected from general property owners within the relevant Board district; rents on non-operating land and other property with which a port may be endowed; the financial results of farm operations on land endowments; and interest earnings on investments usually in Government and Local Authority securities.

39. The power to levy local taxes is at times granted by Parliament to the smaller or less affluent Boards, or to Boards in the earlier stages of port development as security for a loan and as a means of servicing it. Where there is such power, the prior consent of the taxpayers to raising the loan must be obtained where: (a) the Loan Board requires it; (b) at least five per cent of the taxpayers demand it; (c) the Harbor Board so resolves; or (d) the consent of the taxpayers is required by some enactment other than the Loans Act. The tax is tied to individual loans, is subject to specific maximum amounts and may be levied only when specified minimum financial results of operations are not annually attained. Three of the seven ports involved in the present Project assess local taxes for port purposes. These are Napier, Timaru and Whangarei. Napier and Timaru are not expected to continue this practice for more than another year or two.

40. While no earnings data for all New Zealand Harbor Boards as a group are available, a review of the earnings position of the Boards visited during the appraisal mission indicates that in the past, before the year 1961/62, the general policy to maintain port facilities and services on a self-supporting basis was achieved. For the fiscal year ending September 30, 1962, earnings declined principally because of reduced import traffic in some of the larger ports (see paragraph 21). Recently revised estimates of 1962/63 earnings based upon 10 or 11 months actual experience shows a generally improved earnings position, somewhat better than earlier forecast.

D. Finances

41. In general, the capital structure of the Boards consists of internally-generated funds and loan capital. There appears to have been no initial investment of equity capital and, as a result, small Boards such as Whangarei which are undertaking new, relatively large investment programs, will for some time have public debt disproportionately large in relation to equity. All the Project Boards except Whangarei have invested large amounts in New Zealand Government or other local authorities' securities or in the National Provident Fund. Some of these funds represent specific purpose reserves and are earmarked for such requirements as marine, fire and workers' insurance. Other of these funds representing loans repayment and general purpose reserves could be used to cover interest and amortization payments whenever required and reflect a generally sound financial position.

E. Debt

42. There is no dependence on Government for funds to meet capital expenditure needs. Recourse has been had in the past to the domestic public money market usually within the territorial jurisdiction of the borrowing Harbor Board. Money may not be borrowed, otherwise than in anticipation of revenue, without the prior consent of the Governor-General in Council following the procedure described in paragraph 8. Temporary loans by way of bank overdraft or from other sources require no special authority.

43. Local subscription to Harbor Board public issues had until 1961/62 been prompt for the full amounts authorized. In 1962 the supply of money had not equalled the demand by local authorities and some difficulty had been experienced in raising authorized amounts. This situation has eased materially during the last 12 months and there is no particular problem in raising money on the local market.

44. The interest rate on public borrowing has risen progressively from about 4 per cent ten years ago to about 5-1/4 per cent at the present time. Maturity dates vary ranging from medium to long-term, that is, from 7 up to 35 years with the majority of the loans maturing in about 15 years. The Loans Board has since its inception adopted a maximum loans period of 35 years. It has adhered to this policy as a general rule, although it has reserved the right to fix a longer period in exceptional circumstances. Loans are generally made repayable over a period not exceeding a conservative estimate of the life of the assets to be created, having regard to the factor of economic obsolescence.

45. The proceeds of public loans must be paid into a separate bank account or accounts and may not be used except for the specific purposes of the loan. Loan monies may be deposited at interest with any commercial bank, trustee savings bank, the Post Office Savings Bank, in New Zealand Government securities or with the National Provident Fund Board. Any profit accruing or loss suffered in holding securities belonging to a Loan Account is to be credited or charged to the Loan Account as the case may be. Interest earned in respect of the investment of loan monies must be applied against the annual charges of the loan. There is no statutory authority for investment of loan monies outside New Zealand.

46. A Harbor Board may establish, and many have established, sinking funds in order to provide for repayment of a loan. In such case, Sinking Fund Commissioners must be appointed by the Board for the receipt and investments of the sinking-fund monies, including interest thereon, in such securities as the Board may direct. Special statutory provisions apply to the investment of Harbor Board sinking funds. The debt/equity ratios set forth below have been based on debt net of sinking funds.

F. Fixed Assets and Depreciation

47. In no case are the gross costs of fixed assets or the historical total of accumulated depreciation shown on the balance sheet. The balance sheets show only net fixed assets at the beginning of the year, additions and write-offs during the year, the annual depreciation charges for the current year and the residual net fixed assets at the end of the year. Depreciation is recorded on a declining balance basis, without deduction of salvage value, related to service lives prescribed indirectly by the Local Government Loans Board in its schedule of loan periods for various works. Reasonable levels of depreciation appear to result from these methods. There is an exception in the case of Napier which port charges a relatively small amount for depreciation because debt service is charged to revenue.

G. Earnings and Finances - Project Boards

48. The earnings of the five Harbor Boards referred to herein as the Project Boards (see Chapter VI) are shown for the year 1961/62, in the following table, in thousands of New Zealand pounds:

Harbor Board	Operating Revenues	Operating Expenses 1/	Net Operating Revenues	Net Income 2/	Operating Ratio
Auckland	1,984	1,905	79	6	96
Lyttelton	794	533	261	260	67
Napier	314	152	162	161	48
Timaru	183	128	55	102	70
Whangarei	68	54	14	25	79

Note: 1. Operating expenses include depreciation, exclude interest.
2. Net income is after non-operating revenues and expenses and after all fixed charges including interest.

49. The general financial position of the Project Boards is summarized in the following table:

Harbor Board	% Net Revenues 1/ of Net Fixed Assets	Current Ratio	Debt/ Equity Ratio	Debt/ Service Ratio	Times Interest Earned
Auckland	2.4	3.9 to 1	52/48	1.0	1.0
Lyttelton	9.3	4.1 to 1	49/51	2.1	2.9
Napier	9.1	7.9 to 1	51/49	1.6	3.4
Timaru	6.8	2.1 to 1	38/62	2.3	4.2
Whangarei	4.3	2.1 to 1	84/16	1.0	1.6

Note: 1. All net revenues include non-operating revenues as described in paragraph 38.

V. GENERAL DEVELOPMENT OF PORTS

50. The procedures under which port development is controlled have been described in paragraphs 7, 8, and 9 above. Projects are initiated by the individual Harbor Boards to meet local demand and the requirements of shipping. Implementation depends on the Boards' ability to provide finance and upon approval by Parliament and a statutory board given mainly on financial grounds. Government approval is in theory required only as regards the technical aspects although in practice, the statutory board's decisions are made in compliance with the Government's general economic and financial policy.

51. The Boards have a continuing program of development. Capital expenditure on the improvement and extension of facilities was of the order of £NZ 3 million per annum during the period 1957-61 and expenditure at about this rate is expected to continue. While many of the works are minor, substantial projects are involved in a number of cases. In the older and larger ports i.e. Auckland, Wellington, Lyttelton and Otago, the works concerned involve mainly the modernization of existing facilities or the building of new facilities in substitution for those which have become obsolete. At Tauranga a new port has been built in recent years to provide for the growing commerce of the area and further extension is contemplated. At Whangarei additional facilities are being provided in connection with the refinery under construction there, and at Taranaki extensions are planned to meet requirements in connection with future natural gas and liquid petroleum production in the neighborhood. At Bluff, a new port has been built in recent years, further extension of which will be undertaken if the "Comalco" aluminium smelter scheme matures. At Nelson, Napier and Timaru additional berthage is being provided. At October 1961, the estimated outstanding cost, of these schemes, many of which were still being processed for Parliamentary and other approval, was about £NZ 13,000,000. It is expected that most of this amount will be spent during the period 1963-67.

VI. THE PROJECT

A. Description

52. From the general program described above, a number of items have been selected as suitable for Bank lending. Selection has been made principally on the grounds of degree of preparation and suitability of timing. Some of the items have already been put in hand, others are due to be begun in the near future. All will be completed by 1967. The works are being carried out by the Auckland, Lyttelton, Napier, Timaru and Whangarei Harbor Boards.

Auckland

Additional quay cranes, miscellaneous cargo-handling equipment and new dredging equipment will be provided for use at the main Waitemata facilities. At Onehunga, the existing berthage will be extended by 500 feet of marginal wharf, and a cargo shed provided. (Onehunga is a coastal terminal on Manukau Bay leading to the Tasman Sea, distinct from the main port facilities at Waitemata Bay, on the Pacific coast). The cost of the over-all capital program for Auckland during the period 1963-67 is £NZ 3.5 million. That part of the program included in the project covered by this report amounts to £NZ 1.15 million.

Lyttelton

Twelve portal cranes will be provided on a 3,000 marginal wharf at the Eastern Extension. This extension comprises a breakwater, an embankment, extensive reclamation and transit sheds. It is now nearing completion and is not included in the project. Also excluded from the project is the Inner Harbor Schemes which consists of the reconstruction of existing obsolete piers and provision of up-to-date transit sheds. The full cost of the program is expected to be £NZ 3.8 million, of which £NZ 0.48 million, the total estimated cost of the quay cranes, is included in the present project.

Napier

A new two-berth finger pier for general cargo will be built at a cost of £NZ 530,000. Additional facilities would raise the total program for the period to £NZ 798,000.

Timaru

A mechanical loading installation including shed and rail tracks, will be provided for the all-weather loading of lamb carcasses, meat in cartons, etc.; also a transit shed at an adjoining wharf and miscellaneous cargo handling equipment. This project will cost £NZ 470,000 out of a total program through 1967 of £NZ 1.15 million.

Whangarei

Tugs, a tug jetty, a pilot launch, a slipway, navigational aids, a workshop and offices, will be provided. These items will be used in connection with the greatly increased tonnage of shipping which will use the harbor as a result of the coming into operation of a new petroleum refinery, due for completion in 1964. The total program will cost about £NZ 2.8 million with the project covered in this report amounting to £NZ 1.9 million.

B. Estimated Cost of the Project

53. The total estimated cost of the project is £NZ 4.5 million, of which £NZ 2.8 million would be foreign currency and £NZ 1.7 million local currency. A breakdown of the estimate by port is as follows. (Details of the project are presented in Appendix 5):-

Estimated Cost of Project
(£NZ Million)

	Foreign Currency	Local Currency	Total
Auckland	.79	.36	1.15
Lyttelton (Christchurch)	.28	.20	.48
Napier	.14	.39	.53
Timaru	.35	.12	.47
Whangarei	1.22	.65	1.87
	2.78	1.72	4.50

C. Status of Authorization of the Project Items

54. Most of the items in the project presented in this report, have received Parliamentary and LALB approval. However, it will be a condition of disbursement for each item that authorization procedure, covering the whole of the item including the issue of the Order in Council and ratepayers poll where involved, should have been completed.

D. Engineering Design, Construction and Procurement

55. All the Boards involved in the project have their own engineering staff which carries out the civil engineering design and supervision involved, using consultants only for specialized work such as soil mechanics investigations, dredge design (in some cases), and architectural work. Where works are submitted to LALB, the proposals are accompanied by preliminary drawings, these as described in paragraph 8 are examined by the Ministry of Works' technical staff, who, however, limit their scrutiny to the extent necessary to determine whether the type of design and layout are suitable and whether the estimate is reasonable. These arrangements are satisfactory.

56. The estimates of cost have been prepared by competent persons and appear reasonable. They are based on prevailing prices of materials and work, the actual cost of recently completed work of a similar nature, or actual bids. Sufficient allowances for contingencies have been included.

57. Contracts for the procurement of equipment will be awarded after international competitive bidding. This is the usual practice of the Boards and was the case in respect of such major items as have already been ordered. The import duties which are applicable to the kind of items involved in the project are not likely to have a serious effect on international competition. The Government has requested the Boards to take into account the need to conserve foreign exchange when placing orders so that, in effect, the degree to which bidders utilize domestic resources may affect the award of bids. The Government is able to exercise an influence in this matter by means of its import licensing system but there is no reason to believe that it will do so in an unreasonable manner. For construction, the Napier Board will use direct labor on the grounds that it is cheaper. Construction contracts at Auckland, Timaru and Whangarei have been or will be awarded after bidding open to foreign firms. In all cases, however the contracts would seem to be too small to be of interest to other than local firms.

E. Traffic Forecasts and Economic Justification

58. Economic growth in New Zealand, in the recent past, has been relatively slow but steady. Population has been increasing by an annual average of 2.4 per cent and during the last decade gross national product has risen by an annual average of 3.3 per cent. Declining export prices and the recent threat of possible loss of free access to the U.K. market has had a somewhat depressing effect on the economy. Imports have been at a reduced level because of restrictive import license regulations. For private imports within the period July 1, 1962 to June 30, 1964, a £NZ 240-250 million level has been provided annually and this represents a considerable easing in comparison with the previous 18-month period. Efforts of the U.K. to enter the Common Market have lead to serious attempts to expand markets and some success has been achieved in this respect. The level of traffic passing through the ports will, however, depend on the volume of trade not on its value. Import restrictions are aimed at reducing the value of imports and will affect principally high-value cargo. Its effect on total volume may be limited. Similarly, a fall in the value of exports through a decline in world prices may in fact be accompanied by an increase in volume.

59. The various port Boards have approached recent phases of their continuing capital-investment programs with the foregoing facts in mind, and the general climate - relatively slow-but-steady progress - has pervaded their traffic forecasts. Auckland's total traffic is expected to increase from 3,350,000 tons in 1961/62 to about 3,724,000 tons in 1966/67. Lyttelton's traffic during this same period would increase from 1,440,000 tons to 1,725,000 tons. Comparable increases in the traffic of the other ports have been forecast. (For details of these forecasts, see Appendix 3).

60. The current project is part of a program being carried out by most of the Boards for steadily modernizing and extending their facilities. During the years 1957-61 inclusive, loan sanctions for capital investments averaged £NZ 3 million annually. The Project, as stated, is based on conservative estimates of the needs of the ports even with future growth. Each project appears to have ample economic justification. The principal considerations concerning each port are included in Appendix 4.

VII. FUTURE EARNINGS AND FINANCES

61. The Harbor Boards involved in the Project have prepared forecasts of future earnings and finances based on 10 or 11 months actual experiences in 1962/63 and on traffic studies for subsequent years through 1966/67. These data are shown in varying details in Appendix 6. More detailed data are shown there for Auckland, pages 1 to 4, inclusive. The data for the other four Harbor Boards are presented in summary form.

Auckland

62. The forecast of estimated revenues shown on pages 1 and 2 of Appendix 6 reflects an increase in charges of 20 per cent which became effective on October 1, 1963. In making this rate adjustment, the Auckland Harbor Board adopted the recommendations of its consultant, a public accountant of Auckland, Messrs Ross and Melville, that £400,000 in added revenues would be needed in 1963/64 and that the Board refrain from stipulating any fixed future period for the rate increase thereby leaving the way open for the recovery of any additional costs which cannot be foreseen at present. The forecast also includes a 5 per cent increase in rates as of October 1, 1966. The forecast provides for a three per cent cumulative increase in non-operating revenues (rents) and a six per cent cumulative increase in operating expenses. In addition to these assumptions, the forecast assumes an increase in cargo tonnage as indicated in Appendix 3.

63. In reviewing the future financial position of the Auckland Board, particularly the interest earned and debt service coverage, it should be borne in mind that there will remain, as shown on the pro-forma balance sheets, substantial cash investment funds which will be available for any shortfall in earnings, such as occurred in the current year 1962/63. Of such reserve funds more than half are general purpose funds, amounting to £NZ 458,000 until 1965/66 and to £NZ 309,000 in 1966/67.

64. A summary of the earnings forecast by the Harbor Board as submitted, in thousands of New Zealand pounds, for the next five years is as follows:

Period	Operating Revenues	Operating Expenses	Net Operating Revenues	Net Non-Operating Income	Interest	Net Income	Operating Ratio
1962/63	2,023	1,995	28	244	339	(67)	98
1963/64	2,468	2,110	358	249	369	238	85
1964/65	2,517	2,231	286	256	409	133	89
1965/66	2,567	2,360	207	262	444	25	92
1966/67	2,748	2,497	251	269	484	36	91

65. Interest was covered by ratios of 2.9, 1.6, 1.7 and 2.3 in the last four years before 1961/62. However, the interest coverage was only 1.0 in 1961/62 with interest of £NZ 312,000 covered by £NZ 318,000 of net revenues.

For the five-year period 1962/63 to 1966/67 taken as a whole, according to forecasts by the Harbor Board, interest would be covered 1.2 times on the average and in 1962/63 not fully covered. The ratio would be 0.8 in 1962/63; 1.6 in 1963/64, when the 20 per cent rate increase is effective; and would decline thereafter to 1.3, 1.1 and 1.1 in the next three years respectively. This decline is the result of the Harbor Board's forecast that operating expenses would increase faster than revenues. Debt/service coverage in the future years is also meagre, averaging 1.3 times for the five-year period through 1966/67. The coverage would be 1.2 in 1962/63, 1.4 in 1963/64, 1.2 in 1964/65, 1.3 in 1965/66 and 1.1 in 1966/67. In view of the cash reserves referred to in paragraph 63, the foregoing ratios although low in several instances, are acceptable.

66. Net fixed assets as shown in the balance sheet includes a substantial amount of non-operating property. Therefore, the rate of return has been calculated on the basis of total net revenues, operating and non-operating, and net fixed assets at the end of the year. From 1962/63 to 1966/67, the forecast return would be 2.0, 4.3, 3.6, 3.0 and 3.3 per cent, respectively (see Appendix 6 page 1).

67. The Board's cash needs and sources of funds for these years are summarized below:

Cash Requirements		(£NZ '000)
Over-all Capital Program		4,200
Debt Service		3,524
Increase in Working Capital		75
Regular Appropriations		40
	Total	7,839
Sources of Funds		
Net Revenues		2,410
Depreciation		1,509
Transfer from Invested Funds		751
Loan Proceeds		3,450
Decrease in Working Capital	Total	445
		8,565
Increase in Cash Position		726

68. Internal cash generation would amount to £NZ 3,919,000 and barely exceed debt service of £NZ 3,524,000. An additional amount of £NZ 751,000 would be available from the cash resources of the port. The proposed IBRD loan would amount to £NZ 792,000 leaving some £NZ 2,658,000 to be obtained from other borrowings. The Harbor Board intends to obtain these funds as in the past by selling bonds locally.

69. Long-term debt would increase from £NZ 7.5 million less sinking funds of £NZ 611,000, or a net of £NZ 6.9 million on September 30, 1962 to a net debt of £NZ 8.5 million on September 30, 1967. Equity during this period would rise from £NZ 6.4 to £NZ 7.4 million. The debt/equity ratio would range between 49/51 and 52/48, during the next five years.

Lyttelton

70. A summary of the earnings as forecast by the Lyttelton Harbor Board in thousands of New Zealand pounds for the next five years is as follows: (See Appendix 6, page 5).

Period	Operating Revenues	Operating Expenses	Net Operating Revenues	Non-Operating Income	Interest	Net Income	Operating Ratio
1962/63	788	532	256	106	159	203	68
1963/64	858	534	324	101	205	220	62
1964/65	885	549	336	98	219	215	62
1965/66	914	565	349	92	232	209	62
1966/67	939	582	357	85	258	184	62

71. The Harbor Board's forecast except for 1962/63 assumes a moderate annual average rise in revenues of 3.0 per cent. Particular items of operating expenses are estimated both to rise and fall depending on how they are affected by future operations. Over-all, little change is forecast for the years 1962/63 and 1963/64, with annual increases of about three per cent thereafter.

72. Substantial amounts of non-operating property are included in the net fixed assets. The over-all return on total net fixed assets will generally decline from 9.3 per cent in 1961/62 to 7.3 per cent in 1962/63, 7.5 per cent in 1963/64, 7.0 per cent in 1964/65, 6.5 per cent in 1965/66 and 5.8 per cent in 1966/67.

73. Interest will be covered by total net revenues, 2.3 times in 1962/63. This ratio will decline each year until it reaches 1.7 in 1966/67. The average for the five-year period will be 2.0 according to the Harbor Board's latest estimates. The annual debt/service ratios would be 1.3, 1.4, 1.3, 1.3 and 1.4 respectively, in each of the next five years. The average for the period would be 1.3.

74. The Lyttelton Harbor Board's cash requirements and availability for this period are as follows.

Cash Requirements	(£NZ '000)
Over-all Capital Program	3,813
Debt Service	2,042
Increase and Working Capital	15
Regular Appropriations	670
Total	6,540

Cash Availability	(£NZ '000)
Net Revenues	2,104
Depreciation	367
Transfers from Reserves Funds	555
Loan Proceeds	3,380
Total	6,406
Decline in Cash Position	134

75. Internal cash generation would amount to £NZ 2,471,000 or more than the debt/service requirement for the period of £NZ 2,042,000. An additional £NZ 555,000 would be made available from the cash resources of the port. The Harbor Board intends to obtain £NZ 3,105,000 in addition to the Bank loan in order to cover the remaining requirements for its capital expenditures program.

76. On September 30, 1962, the total of invested reserve funds and special accounts was £NZ 2.6 million, being made up of £NZ 0.8 million special reserve funds, £NZ 1.0 million Loans Repayment Account and £NZ 0.8 million Port Development Account. These funds were invested principally in Government bonds, local body securities and the National Provident Fund.

77. Long term debt would rise sharply from £NZ 3.1 million on September 30, 1962, to £NZ 5.6 million in 1967. Equity would increase substantially during this period, but at a slower pace than debt, despite a drawdown of the Loans Repayment Account of almost £NZ 300,000 for debt retirements. This account although not a sinking fund in the normal sense has been established specifically for debt service, and the annual net change therein has been taken into account in calculating debt-coverage ratios. The Board maintains this account in lieu of sinking funds. The debt-equity ratio would deteriorate from 52/48 in 1962/63 to 60/40 in 1966/67, but substantial amounts would remain invested in reserve funds amounting to more than £NZ 1 million in 1966/67 over and above £NZ 728,000 in the Loans' repayment account at that time.

Napier

78. A summary of the financial position of the Napier Harbor Board is set forth on page 6 of Appendix 6.

79. The revenue and expense position as forecast by the Napier Harbor Board for the years 1962/63 to 1966/67, in thousands of New Zealand pounds is summarized as follows:

Period	Operating Revenues	Operating Expenses	Net Operating Revenue	Net Non-Operating Income	Interest	Net Income	Operating Ratios
1962/63	327	188	139	65	69	135	57
1963/64	329	159	170	48	58	160	48
1964/65	342	191	151	50	39	162	56
1965/66	356	171	185	50	39	196	48
1966/67	368	206	162	51	35	178	56

80. Data for 1962/63 are based on 11 months actual experience. Thereafter, little change is forecast for 1963/64. For subsequent years revenues are expected to rise annually by about 4 per cent with proportionate increases in expenses. The fluctuation in operating expenses is due to the biennial expense of over-hauling dredging equipment. Local taxes would no longer be a source of non-operating income after 1962/63. However, relatively large amounts of non-operating income would continue to be derived from endowment rents, non-port operations and interest earned. The operating ratios, calculated before net non-operating revenues, range from 57 in 1962/63 to 48 in 1963/64 and 1965/66.

81. The over-all return on total net fixed assets, operating and non-operating is relatively satisfactory in each of the future five years. They are 7.8 per cent, 7.6 per cent, 6.5 per cent, 7.3 per cent and 6.6 per cent for 1962/63, 1963/64, 1964/65, 1965/66 and 1966/67, respectively.

82. Interest earned ratios are excellent, rising from 2.9 times in 1962/63 to 6.1 times in 1966/67. Debt service coverage, ranges downward from 1.3 in 1962/63 to 1.0 in 1965/66 and in 1966/67. The apparent reason for the good interest ratios in comparison with the meagre debt service coverage is the result of the debt structure. Within the five-year period 1962/63 to 1966/67 inclusive, eight of twenty-two outstanding loans will mature and £NZ 1,065,000 will be paid out in debt amortization compared to net revenues, operating and non-operating, of £NZ 1,071,000 during this period. The debt-service ratios shown in the appendix take into consideration payments from and appropriations to sinking funds and other reserves which are specifically set aside for repayment of loans. In meeting debt-service requirements from earnings and such reserves, the balances of reserves other than sinking funds as shown in the appendix will range from £NZ 130,000 to £NZ 50,000 in the five-year period and these invested funds may be used for service of debt in event of any short-fall in earnings.

83. As a result of the amortization schedule, long-term debt would decline from £NZ 1.451 million in 1962/63 to £NZ 1.225 million in 1966/67 and the debt/equity ratio would improve substantially from 47/53 in the former year to 35/65 in the latter year.

84. The Board's cash needs and sources of funds are summarized below for the five-year period as a whole.

Cash Requirements	(£NZ '000)
Over-all Capital Program	729
Debt Service	1,307
Other	106
Total	2,142
Cash Available	
Net Operating Revenues	807
Net Non-Operating Income	264
Depreciation	91
Transfers from Reserves (Net)	335
Loans	563
Total	2,060
Decrease in Cash Position	82

85. Internal cash generation would amount to £NZ 1,162,000 compared to debt/service requirements to £NZ 1,307,000. The Harbor Board's financial plan would include, besides the proposed IBRD loan of £NZ 140,000 additional borrowing of £NZ 423,000.

Timaru

86. Page 7 of Appendix 6 is a summary of the income accounts, balance sheet data and cash flow forecasts of the Timaru Harbor Board.

87. Revenues for 1962/63 are estimated by the Board on the bases of 11 months actual experience to be about on the same level as in 1960/61 and somewhat higher than in 1961/62. Moderate increases are forecast thereafter, the sharp rise in revenues in 1964/65 being due to the acquisition and rental of cargo-handling plant in that year, such rentals amounting to £NZ 50,000, £NZ 51,000 and £NZ 52,000 in 1964/65, 1965/66 and 1966/67, respectively.

88. Operating expenses, excluding depreciation, would rise moderately also, except for maintenance expense related to the new cargo-handling equipment in 1964/65 and thereafter. Depreciation expense would also rise sharply in the last three years of the five-year period.

89. Non-operating revenues consist of local taxes collected on behalf of the port, forecast at a constant £NZ 50,000 each year, endowment rents ranging from £NZ 14,000 to £NZ 16,000 each year according to the forecast and interest earned.

90. As shown in the Appendix, the operating ratios would be 74 in 1962/63, 75 in 1963/64, 72 in 1964/65, 71 in 1965/66 and 73 in 1966/67. The rate of return based on all net revenues, operating and non-operating would be 5.9, 4.6, 4.9, 4.9 and 4.8 per cent respectively, in each of the next five years.

91. Interest would be covered by an adequate margin with the interest earned ratio being estimated at 3.2 in 1962/63, 2.8 in 1963/64, 2.6 in 1964/65, 2.2 in 1965/66 and 2.3 in 1966/67. The debt/service coverage would range between 2.7 in 1964/65 and 1.6 in 1965/66 and 1966/67. Debt/equity ratios during the next five years would range between 38/62 and 41/59.

92. The Board's cash needs and sources of funds for the five-year period are as follows:

	(£NZ 000)
Cash Requirements	
Over-all Capital Program	1,150
Debt Interest	260
Debt Amortization	197
Regular Appropriations	203
Other	10
Total	1,820
Cash Available	
Net Operating Revenues	304
Non-Operating Income	359
Depreciation	232
Transfers from Cash Reserves	598
Loan Proceeds	651
Total	2,144
Increase in Cash Position	324

93. Of the total cash required including debt/service during the 1962/63 - 1966/67 period, 35 percent would be realized from loans, about 13.7 per cent from local taxes, and the balance of about 51 per cent from internally-generated funds. In addition to a proposed IBRD loan of £NZ 350,000, local borrowing of £NZ 300,000 would be required.

Whangarei

94. A summary of the projected earnings and finances of the Whangarei Harbor Board is set forth on page 8 of Appendix 6. Future finances are closely related to the very substantial growth in traffic indicated in Appendix 3. This growth is expected to take place upon the completion of an oil refinery now under construction. In this respect, the Board will, with completion of the refinery next year (1964), find itself very much, but not entirely, in the same position as a new port just beginning its operations. The existing rates, particulary wharfage charges, are the bases of the forecast revenues.

95. Based upon the estimates submitted, operations would be profitable, as indicated by operating ratios ranging between 81 and 49 during the years 1963/64 and 1966/67.

96. Local taxes amounting to £NZ27,000 are included in 1962/63 non-operating revenues. Thereafter, non-operating revenues include only endowment rents and interest and average about five per cent of total revenues.

97. The return on total net fixed assets represented by all net revenues, both operating and non-operating in each case, would rise from 2.6 per cent in 1962/63 to 3.2 per cent in 1963/64 and then would be 13.5 per cent in 1964/65, 12.8 per cent in 1965/66 and 13.8 per cent in 1966/67.

98. The interest earned ratios would be 1.5, 2.0, 8.3, 2.2 and 2.5 in each of the five future years, respectively. The debt/service coverage would improve from 1.1 in 1962/63 to 2.0, 4.1, 1.4 and 1.7 in each of the subsequent future years, respectively. For the five-year period as a whole, the average annual interest earned ratio would be 2.8 times and the average annual debt/service coverage would be 2.0 times.

99. Long-term debt would rise from £NZ 3.0 million in 1962/63 to £NZ 4.4 million in 1966/67, a rise of almost 50 per cent. As a result, the debt/equity ratio would continue to be unfavorable, although improving from 91/9 in 1962/63 to 81/19 in 1966/67. This unfavorable debt/equity ratio is inevitable because there exists no paid-in equity capital whatsoever (as is the case with all ports in New Zealand) and because of the extraordinarily rapid expansion of facilities needed to cope with the very sharp rise in traffic expected from the new oil refinery. However, the financial difficulties appear to be short-term.

100. The estimated cash requirements and availability for the five-year period are summarized as follows:

Cash Requirements	(£NZ '000)
Over-all Capital Program	3,727
Debt Service	1,220
Refinery expansion preliminary expenses and interest	506
Other development preliminary expenses and interest	5
Regular Appropriations	368
Repayme nt Bank Overdraft	15
Total	5,841

	(£NZ 000)
Cash Available	
Net Operating Revenues	1,701
Net Non-Operating Revenues	211
Depreciation	490
Proceeds of Loans	3,495
Total	5,897
Increase in Cash position	56

101. According to the above summary, some 60 per cent of cash requirement would be met from loans. After covering debt-service, nearly 32 per cent of the cost of the capital programs would be covered from internally-generated funds. In addition to a proposed IBRD loan of £NZ 1,223,000, loans amounting to £NZ 2,272,000 would need to be obtained.

IX. CONCLUSIONS AND RECOMMENDATIONS

102. The project ports are well organized, managed and operated. The past earnings of most of the Harbor Boards concerned have been good and they appear to be in a reasonably sound financial position. Future finances will remain good and substantial reserves will be maintained in most cases.

103. In general, the project is technically and economically sound. The estimates of cost are realistic. Procurement procedures proposed are such as to be acceptable to the Bank.

104. The loan would be made to the Government which would re-lend the funds to the various Harbor Boards on the same terms as the Bank loan to the Government, in accordance with separate subsidiary agreements to be negotiated between the Government and the beneficiary harbor boards. The consummation of such subsidiary agreements would be conditions of disbursement by the Bank in the case of each harbor board.

105. It is recommended that a Bank loan of US$ 7.8 million equivalent be made to the Government. A term of 25 years including a four-year period of grace would be appropriate.

October 28, 1963

NEW ZEALAND PORTS

TONNAGES OF CARGO HANDLED AT PRINCIPAL PORTS 1962 a/

Manifest tons

Port	Dry Cargo					Petroleum b/					
	Inwards		Outwards		Total	Inwards		Outwards		Total	Total Cargo
	Coastal	Overseas	Coastal	Overseas		Coastal	Overseas	Coastal	Overseas		
Bay of Islands	4,330	2,123	-	28,782	35,235	-	-	-	-	-	35,235
Whangarei	124,505	29,290	173,086	80	326,961	1	51,632	-	-	51,633	378,594
Auckland (Waitemata)	614,696	1,218,408	193,454	540,542	2,667,100	3,246	643,967	4,193	1,857	653,263	3,320,363
Auckland (Onehunga)	80,245	291	83,717	-	164,253	25	-	478	-	503	164,856
Raglan	16,641	-	1,457	-	18,098	-	-	-	-	-	18,098
Tauranga	21,583	148,634	22,703	382,510	575,430	-	165,429	-	-	165,429	740,859
Ohiwa	1,212	-	12,130	-	13,342	-	-	-	-	-	13,342
Gisborne	41,158	1,854	14,551	18,096	75,659	11,295	-	2	-	11,297	86,956
Napier	93,257	159,114	16,192	153,884	422,447	9,455	111,158	2,299	7,009	129,921	552,368
Taranaki	47,397	176,833	5,122	141,803	371,155	10,325	97,985	2,509	8,134	118,953	490,108
Wanganui	111,285	555	10,277	229	122,346	8,172	-	-	-	8,172	130,518
Wellington	519,681	598,784	403,357	241,730	1,764,052	8,300	500,210	139,063	23,705	671,278	2,435,330
Picton	109,088	2,539	89,173	14,429	225,194	5,279	232	17	-	5,628	230,822
Wairau	5,235	-	4,531	-	9,766	582	-	-	-	582	10,348
Nelson	57,279	19,164	85,130	66,937	228,530	11,263	35,310	812		47,285	275,915
Motueka	6,404	-	24,485	-	30,889	108	-	-	-	108	30,997
Westport	3,037	3,098	188,492	-	194,627	102	-	-	-	102	194,729
Greymouth	8,265	-	155,014	-	163,279	458	-	6	-	464	163,743
Kaiapoi	14,543	-	16,480	-	31,023	2,149	-	66	-	2,215	33,238
Lyttelton	275,767	376,015	278,890	124,657	1,055,329	4,778	298,886	28,611	10,306	342,581	1,397,910
Timaru	21,862	16,410	79,011	91,819	209,102	32,378	28	3	-	32,409	241,511
Oamaru	6,366	168	24,506	-	31,040	9,744	-	5	-	9,749	40,789
Otago	102,419	166,250	84,466	92,714	445,849	7,914	120,793	56	-	128,763	574,612
Bluff	45,107	103,529	26,061	132,523	306,220	14,905	87,853	540	-	103,298	409,518
Total	2,331,462	3,123,059	2,001,770	2,030,735	9,487,026	140,579	2,113,483	178,660	51,011	2,483,733	11,970,759
Other ports c/											159,451
GRAND TOTAL											12,130,210

a/ Transhipments included as inward and outward cargo; figures are for calendar year 1962.

b/ Practically all bulk liquid.

c/ Distribution of traffic for 7 minor ports not available.

Appendix 1

NEW ZEALAND PORTS

Total Tonnages of Cargo Handled at Each Port, 1957 - 1962

Manifest Tons

	Port	1957	1958	1959	1960	1961	1962
	Mangonui	3,321	2,813	2,659	3,575	5,872	3,712
	Whangaroa	-	-	-	-	-	4,834
x	Bay of Islands	5,440	28,919	25,318	33,578	36,498	35,235
x	Whangarei	310,420	321,701	302,192	293,060	343,076	378,594
x	Auckland (Waitemata)	3,519,525	3,309,348	3,091,745	3,289,976	3,464,713	3,320,363
	Auckland (Onehunga)	93,266	101,902	122,176	129,162	126,402	164,856
x	Raglan	14,778	17,240	15,352	19,870	24,590	18,098
	Thames	4,881	5,289	4,395	3,766	4,524	3,662
x	Tauranga	265,966	399,147	570,355	642,599	758,918	740,859
x	Whakatane (including Ohiwa)	17,196	14,123	7,895	12,466	9,912	13,342
	Kutarere	8,326	5,434	4,011	-	-	-
	Opotiki	3,921	1,488	943	-	-	-
x	Tokomaru (Tokomaru Bay)	3,186	2,241	1,500	1,512	1,138	884
x	Uawa C.C. (Tolaga Bay)	1,901	1,615	1,014	1,339	2,907	911
x	Gisborne	83,651	87,340	88,805	91,205	91,250	86,956
x	Napier	422,263	427,857	447,774	498,978	556,971	552,368
x	Taranki (New Plymouth)	435,951	369,592	452,029	460,428	564,812	490,108
x	Patea	14,519	15,506	8,506	74	-	-
x	Wanganui	142,597	118,530	130,305	128,336	139,824	130,518
x	Wellington	2,612,824	2,565,141	2,237,660	2,436,254	2,563,345	2,435,330
x	Marlborough (Picton)	98,584	99,647	93,879	125,615	124,636	230,822
x	Wairau (Blenheim)	8,287	9,758	9,794	10,634	8,326	10,348
x	Nelson	207,484	202,719	247,467	235,766	299,959	275,915
x	Motueka	29,866	30,356	35,911	31,106	36,390	30,997
	Tarakohe	-	-	-	-	152,446	141,564
	Westport	223,876	239,553	206,925	207,011	202,443	194,729
x	Greymouth	219,538	195,023	207,591	197,908	205,101	163,743
	Jackson Bay	-	-	-	908	786	-
	Kaiapoi	-	-	14,168	17,292	35,145	33,238
x	Lyttelton (Christchurch)	1,431,477	1,378,305	1,295,846	1,399,261	1,546,312	1,397,910
x	Timaru	211,533	212,599	218,579	221,195	250,889	241,511
x	Oamaru	55,643	50,592	42,398	37,011	39,970	40,789
x	Otago (Dunedin)	595,311	556,345	545,987	588,914	604,608	574,612
x	Southland (Bluff)	294,372	329,553	335,357	367,029	403,118	409,518
	Half-Moon Bay	4,843	4,132	3,726	4,513	4,065	3,884
	Totals	11,344,746	11,134,298	10,772,262	11,490,341	12,599,946	12,139,210

x Harbor Board

Appendix 2

NEW ZEALAND PORTS

Past and Estimated Future Traffic in Ports where there are Project Items (a)

000 Manifest tons

Port		Actual 1957	1958	1959	1960	1961	1962	Estimated 1963	1964	1965	1966	1967	1972
1. Auckland													
(a) Waitemata	Bulk petroleum	641	583	534	599	616	600	612	624	636	649	662	731
	Bulk dry cargo	694	646	594	604	675	611	623	636	648	661	675	745
	Other dry cargo	2,185	2,080	1,963	2,087	2,173	1,988	2,028	2,068	2,110	2,152	2,195	2,423
	Total	3,520	3,309	3,091	3,290	3,464	3,199	3,263	3,328	3,394	3,462	3,532	3,899
(b) Onehunga	Bulk petroleum	1	1	1	1	1	-	-	-	-	-	-	-
	Bulk dry cargo	6	7	20	24	21	13	26	27	29	30	31	40
	Other dry cargo	86	93	101	104	104	138	133	139	146	154	161	206
	Total	93	101	122	129	126	151	159	166	175	184	192	246
2. Lyttelton (Christchurch)	Bulk petroleum	290	258	289	310	404	370	379	400	414	429	443	508
	Bulk dry cargo	156	142	106	106	94	119	122	129	134	138	143	164
	Other dry cargo	985	979	900	983	1,048	951	972	1,028	1,064	1,101	1,138	1,303
	Total	1,431	1,279	1,295	1,399	1,546	1,440	1,473	1,557	1,612	1,668	1,724	1,975
3. Napier	Bulk petroleum	82	96	110	113	130	116	136	147	154	163	175	)
	Bulk dry cargo	142	114	133	137	171	144	159	167	176	178	183	) 840
	Other dry cargo	198	218	205	249	256	285	269	294	295	314	318	)
	Total	422	428	448	499	557	545	564	608	625	655	676	840
4. Timaru	Bulk petroleum	16	18	18	22	33	38	40	42	42	44	46	54
	Bulk dry cargo	35	33	19	7	7	6	11	21	23	26	28	36
	Other dry cargo	161	162	182	192	211	208	209	217	220	240	251	295
	Total	212	213	219	221	251	252	260	280	285	310	325	385
5. Whangarei	Bulk petroleum	40	38	49	45	57	52	58	2,460	4,955	5,105	5,455	6,545
	Bulk dry cargo	228	240	200	203	230	259	301	314	402	415	427	514
	Other dry cargo	42	44	53	45	56	70	86	99	133	139	147	207
	Total	310	322	302	293	343	381	445	2,873	5,490	5,659	6,029	7,266

(a) 1957-61 figures refer to calendar years
1962-72 figures to fiscal years ending September 30.

Appendix 3

Appendix 4

NEW ZEALAND PORTS

Detailed Traffic Forecasts and Project Justifications

A. AUCKLAND (MAP 2)

i. Auckland, the largest city in New Zealand, stands on the narrow isthmus joining the province of Northland to the remainder of the North Island. The city thus fronts both the Tasman Sea and the Pacific Ocean. The main harbor and port facilities are in Waitemata inlet, an arm of the Pacific, but the Harbor Board also operates a coastal shipping terminal at Onehunga, on Manukau Bay leading to the Tasman Sea. In the main harbor there are 21 usable general cargo berths, all at finger piers. The layout of many of the berths is obsolete. In addition there are two coal berths, a cement berth and various bulk petroleum handling installations, all adequate for their purpose. Depths alongside are up to 35 feet and there is, in general, no difficulty in obtaining a depth adequate to the berth's usage providing maintenance dredging requirements are met. The controlling depth in the entrance channel is 32 feet so that the larger vessels using the port must enter on the tide. At Onehunga there are two berths each about 300 feet long with a depth of 15 feet alongside

ii. Total traffic at the Waitemata facilities in 1961/62 amounted to 3,199,000 tons of which 600,000 tons were bulk petroleum, 611,000 tons bulk dry cargo, and 1,988,000 tons general cargo. The Harbor Board forecast a moderate future increase in traffic, with a total of 3,532,000 tons in 1966/67 and 3,899,000 tons in 1971/72. Onehunga traffic, mostly general cargo, was 151,000 tons in 1962. It has risen sharply in recent years, having been only 95,000 tons in 1955, and the Board expects this increase to continue at a like rate, reaching 192,000 tons in 1966/67 and 246,000 tons in 1971/72.

iii. The Harbor Board estimates that traffic will exceed the capacity of the existing Waitemata facilities after 1967, but their plans for constructing new berthage to meet this situation are insufficiently advanced for inclusion in the present loan project. However, they have in hand measures to improve efficiency at the existing accommodation by providing additional quay cranes and other cargo handling appliances. They also plan to purchase additional dredging equipment to replace existing obsolete equipment and to provide for the deepening of the entrance channel and at berths made necessary by the increasing proportion of deep draft ships now using the port. Procurement of the cranes and cargo handling equipment will be completed in 1966 and that of the dredging equipment in 1967. At Onehunga they are about to construct additional berthage to meet the requirements of the increasing traffic of the terminal, completion of construction being planned for 1964. The project items are the quay cranes, cargo handling equipment and dredging equipment for the Waitemata facilities, and the wharf extension at Onehunga, including a cargo shed.

iv. The ports service area comprises most of the northern half of the North Island, there being only minor ports in the area in addition to Auckland.

v. The area surrounding Auckland, the largest city in New Zealand, accounts for one-third of the country's present industrial development. Population in the ports service area is expected to grow faster than in New Zealand generally. Factory output of Auckland Province is 44 per cent of the national total. Despite this degree of industrial development much of the service area is as yet comparatively undeveloped farm land. Increased trade based on farm development may result in greater traffic than has been forecast.

vi. The acquisition of new quay cranes and cargo-handling equipment will fill a known demand. The Board does not provide a full wharfinger service and handling of cargo is carried out by labor engaged by others. Cargo-handling equipment including cranes is however rented out by the Board at rates covering its full cost.

vii. The improvements at Onehunga are justified in view of the present shortage of berthage and by the increase in traffic estimated for the future. The expansion of this terminal for coastwise traffic will involve substantial savings in respect of traffic between the Auckland area and the principal ports of the South Island, since the latter are a day nearer to Onehunga than to Waitemata.

viii. The dredging equipment is required to replace existing obsolete equipment and will be used principally for maintenance dredging and for the berth and channel improvements made necessary by the increasing proportion of deep-draft vessels using Waitemata.

B. LYTTELTON (CHRISTCHURCH) (MAP 2)

ix. Lyttelton is the port of Christchurch, second city of New Zealand, from which it is six miles distant. Effective access to the city and the port's service area is at present by rail only, but a road tunnel, due for completion in 1964, will give adequate road access. The existing harbor stands on an arm of the sea. The depth at the existing berths, in the harbor and in the dredged approach channel is 32 feet at low water and there is no physical obstacle to its being further deepened. The existing general cargo facilities comprise 14 working berths of which ten are at finger piers. All are rail served and at present almost the whole of the traffic passing through the port is handled by rail. The facilities are of considerable age, obsolete in layout and unsuitable for handling cargo to and from road transport.

x. In 1961/62 the total traffic amounted to 1,440,000 tons. Of this 370,000 tons were bulk liquid petroleum, 119,000 tons bulk dry cargo, and 951,000 tons other dry cargo. Since 1958 traffic has shown a gradually increasing trend. This is expected to continue and a total figure of 1,724,000 tons is forecast for 1966/67 and of 1,975,000 tons for 1971/72.

xi. To provide for the existing and future traffic of the port the Harbor Board has already put in hand the construction of a 3,000 foot long marginal wharf including a breakwater, embankment, reclaimed transit area, transit sheds and quay cranes, and a depth of 40 feet below LW alongside. This work, known as the Eastern Extension, is outside the existing harbor and is due to be completed in 1964. The project item consists of 12 quay cranes for use on the marginal wharf.

xii. The service area of the port extends over most of the 14,000 square mile Canterbury alluvial plains. The area is economically the most important on the South Island. It grows two-fifths of the nation's arable crops including 70 per cent of its wheat, and supports one-sixth of the nation's sheep. Beef and dairy cattle are also important in this area. The port directly serves Christchurch, the second largest city of New Zealand and the principal manufacturing center in the South Island.

xiii. The carrying out of the Eastern Extension, of which the project item forms part, is well justified by the 1,300,000 tons of general cargo traffic expected in 1967. Hire charges covering the full cost of the cranes will be levied.

C. NAPIER (MAP 2)

xiv. The port of Napier is an artificial harbor situated on the Bay of Plenty, a rapidly developing area on the east coast of the North Island. The present accommodation comprises three open finger piers 800 feet long by 80 feet wide, rail served and suitable for road traffic, used for all types of traffic including bulk petroleum. There are two transit sheds sited on the area at the root of the piers, these being used solely for the small amount of overseas import cargo handled. The depth alongside varies between 26 feet and 35 feet below LW, the entrance channel having a depth of 30 feet. There is no obstacle to further deepening.

xv. In 1961/62 traffic amounted to 545,000 tons of which 116,000 tons was bulk petroleum, 144,000 tons bulk dry cargo, and 285,000 tons other dry cargo. The Harbor Board estimate that these figures will increase to about 676,000 tons, 175,000 tons, 183,000 tons and 318,000 tons respectively by 1966/67 and that the total traffic handled in 1971/72 will be about 840,000 tons. Traffic is fairly seasonal, with occasionally large maximum figures.

xvi. The Board is at present extending the breakwater to afford improved protection in the harbor and proposes to provide for the growth in traffic foreseen in the next few years by constructing a fourth finger pier, of the same length as the existing piers but 90 feet wide, and with 35 depth of water alongside. The project will comprise the construction of this pier which will be completed in 1967.

xvii. Future traffic increases of five per cent per year are considered conservative for the port's productive and relatively fast-growing service area. Its population increase is about four per cent per year and this will be reflected in a rising volume of imports. With the use of increasing quantities of fertilizers, production of meat, wool and fruit is rising rapidly. New industries are being established and existing industries are expanding.

xviii. During 1961, all six existing berths were occupied on 94 days and 70 vessels were delayed from one to five days awaiting an available berth. Additional berthage will be needed by the end of 1965, if satisfactory service is to be accorded users of the port. The construction of a fourth finger pier at Napier and the additional two berths to be acquired thereby are economically justified.

D. TIMARU (MAP 2)

xix. Timaru is situated on the east coast of the South Island, approximately midway between Christchurch and Dunedin. It has an artificial harbor in which the principal present facilities are two very narrow finger piers 800 feet long by 50-60 feet wide, a marginal wharf 1,200 feet long and a berth alongside one of the breakwaters 750 feet long. The depth alongside the berths is 32 feet at LW and in the entrance channel 27 feet. There is no physical obstacle to channel deepening.

xx. Traffic in 1961/62 amounted to 252,000 tons of which 38,000 tons were bulk liquid petroleum. There was no significant amount of bulk dry cargo but meat loaded amounted to 51,000 tons. Total traffic has increased steadily over recent years. The increase is expected to continue at a moderate rate, notwithstanding some possible loss in coastal traffic transferred to rail as a result of the institution of an inter-island rail ferry. Meat loadings are expected to increase substantially, estimated figures for 1967 and 1972 being 55,000 and 62,000 tons respectively.

xxi. The Board has in hand the construction of marginal wharf 1,100 feet long to provide modern facilities in substitution for the existing finger piers. This work is complete except for a transit shed about to be put in hand. In addition, it proposes to install a mechanical meat loading appliance at an existing marginal wharf. This will consist of a shed with rail discharging tracks and conveyor belts, and four enclosed conveyors which will carry the meat completely under cover from the shed into the ships' hold. Although all meat at present comes in by rail and is likely to do so for many years, the layout will be designed suitably to permit discharge from road vehicles if required. The conveyors will be suitable for meat in carton as well as lamb carcasses and could in fact load dairy products, although these are not at present involved in any great quantity. Experience with the loader recently installed at Bluff and commissioned December 1962 has been taken into consideration in the design. A small amount of miscellaneous

cargo handling equipment for general use will also be purchased. The project item will comprise the entire meat loading installation together with the transit shed and the cargo handling equipment. The loading installation will be complete by 1967 and the transit shed by the end of 1964. The cargo handling equipment will be procured in 1964-65.

xxii. At the present level of traffic it is conservatively estimated that the mechanization of meat loading at Timaru will save ship owners £NZ 43,000 annually through improved ship turn-around resulting from the elimination of weather, rail car, and equipment delays. Similarly, the saving in handling labor costs should be at least £NZ 7,000 per annum. Additional savings will result from eliminating the rejection of spoiled meat and from the speed up in handling other cargo through the elimination of congestion on the quay. It is thus concluded that initial net savings will amount to at least £NZ 50,000 annually and that these will grow by about 5% per year as tonnages rise. A tonnage charge calculated to cover the full cost of the installation will be made for its use.

xxiii. The transit shed and cargo handling equipment are necessary for the efficient handling of the general cargo traffic of the port and rental charges covering their full cost will be made. The use of the handling equipment will reduce the number of men required in the port, an important benefit in view of the prevailing labor shortage.

E. WHANGAREI (MAP 2)

xxiv. Whangarei Harbor is an arm of the sea on the northeastern coast of the North Island. The existing port facilities comprise one overseas general cargo berth with a depth of 30 feet, one tanker berth with a depth of 28 feet, one coastal general cargo berth with a depth of 12 feet, and one privately owned cement loading pier with a depth of 18 feet. The entrance channel has a depth of 52 feet. Recently, Whangarei was selected as the site of New Zealand's first oil refinery, which is now under construction near the harbor entrance by a consortium of five major oil companies and a local company. The refinery will have an initial annual throughput of 2,500,000 tons. Crude petroleum will be discharged and products loaded at a two berth pier.

xxv. In 1961/62 total traffic through the port was 381,000 tons of which 52,000 tons were bulk petroleum, 259,000 tons bulk dry cargo, and 70,000 tons other dry cargo. With the commissioning of the refinery in 1964, the petroleum will increase sharply, the tonnage for that year being estimated at 2,460,000 tons, 1966/67 5,455,000 tons and 1971/72 6,545,000 tons. Dry cargo is also expected to steadily increase, a figure of 721,000 tons being forecast for 1971/72 (514,000 tons bulk, 207,000 tons other).

xxvi. The Board has plans for increasing dry cargo berthage to meet the needs of the increasing traffic, but these are not sufficiently advanced to form items of the proposed loan. In addition, it is providing a number of items required by the greatly increased tonnage of shipping which will be

using the harbor as a consequence of the construction of the refinery. These will constitute the project item and comprise tugs, a tug jetty, a pilot launch a slipway, navigational aids, a workshop, and offices. Completion is planned for 1964.

xxvii. With the siting of the New Zealand Refining Company's petroleum refinery at Marsden Point, the small provincial port of Whangarei will, in the near future, become the largest port in New Zealand, based on tonnage throughput. Shipping movements will be greatly increased and tankers of the largest size will have to be handled. The additional facilities included in the Project are essential to proper handling of this increased traffic. The equipment will be used for both general purposes as well as for tankers. The jetty which is included in the Project will be used primarily for mooring tugs and other Project craft, but it has been designed suitably for future extension for use as a cargo berth, if this should be required by the expected increase in dry cargo traffic.

NEW ZEALAND PORTS

Estimated Cost of Project
(£ 000)

Item	Foreign Currency		Local Currency		Total	
1. Port of Auckland						
a) Cargo-handling equipment	244,000		36,000		280,000	
b) Onehunga wharf extension, including cargo shed	113,000		181,000		294,000	
c) Dredging equipment	435,000		140,000		575,000	
		792,000		357,000		1,149,000
2. Port of Lyttelton (Christchurch)						
a) Portal cranes for Eastern Extension (12)	275,000	275,000	205,000	205,000	480,000	480,000
3. Port of Napier						
a) New two-berth finger pier including rail tracks	143,000	143,000	386,000	386,000	529,000	529,000
4. Port of Timaru						
a) Mechanical meat-loading installation including conveyors, shed, rail sidings, etc.	300,000		100,000		400,000	
b) Cargo-handling equipment and transit shed	50,000		20,000		70,000	
		350,000		120,000		470,000
5. Port of Whangarei						
Tugs, launch, jetty etc.	1,223,000	1,223,000	651,000	651,000	1,874,000	1,874,000
Total		2,783,000		1,719,000		4,502,000

Appendix 5

Appendix 6
Consisting of
8 pages

NEW ZEALAND PORTS

Statements Showing Summary and Detailed Financial Data for Auckland Harbor Board and Summary Financial Data for Lyttelton, Napier, Timaru and Whangarei Harbor Boards, on Actual and Estimated Bases Together with Principal Financial Ratios for all Project Harbor Boards

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NEW ZEALAND PORTS

Auckland Harbor Board

Statement Showing Principal Financial Data, Actual and Estimated,
and Principal Financial Ratios
(£ 000)

	Actual					Estimated				
	Year Ending September 30					* Year Ending September 30				
	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
I. Principal Income Accounts										
Operating Revenues	1,984	1,806	1,929	2,216	1,984	2,023	2,468	2,517	2,567	2,748
Operating Expenses (incl. Depreciation)	1,515	1,610	1,743	1,830	1,905	1,995	2,110	2,231	2,360	2,497
Net Operating Revenues	469	196	186	386	79	28	358	286	207	251
Net Revenues (Before Interest)	666	406	455	688	318	272	607	542	469	520
Interest on Long-Term Debt	223	247	274	292	312	339	369	409	444	484
Net Income (Loss)	443	159	181	396	6	(67)	238	133	25	36
II. Principal Balance Sheet Accounts										
Current Assets					673	433	508	467	307	303
Investment (Reserve Funds)					1,415	813	823	833	843	704
Net Fixed Assets					13,383	13,856	14,230	14,894	15,428	15,798
Other					65	55	45	35	25	15
Total Assets					15,536	15,157	15,606	16,229	16,603	16,819
Current Liabilities					173	173	173	173	173	173
Special Reserves					1,415	813	823	833	843	704
Buildings on Leasehold					65	55	45	35	25	15
Long-Term Debt					7,491	7,212	7,436	7,941	8,310	8,515
Equity					6,392	6,904	7,129	7,247	7,252	7,412
Total Liabilities and Equity					15,536	15,157	15,606	16,229	16,603	16,819
III. Cash Flow Data						Year Ending September 30				
Cash Required						1,357	1,474	1,611	1,670	1,727
Cash Available						2,249	2,388	2,548	2,630	2,711
Cash Balance End of Year						892	914	937	960	984
IV. Ratios										
% Operating Expenses of Operating Revenues	76	89	90	83	96	98	85	89	92	91
% Net Operating Revenues of net Fixed Assets					0.6	0.2	2.5	1.9	1.3	1.6
% Net Revenues of Net Fixed Assets					2.4	2.0	4.3	3.6	3.0	3.3
Ratio Current Assets to Current Liabilities					3.9 to 1	2.5 to 1	2.9 to 1	2.7 to 1	1.8 to 1	1.6 to 1
Ratio Debt to Equity					52/48	49/51	49/51	50/50	52/48	52/48
Times Interest Earned					1.0	0.8	1.6	1.3	1.1	1.1
Debt Service Coverage					1.0	1.2	1.4	1.2	1.3	1.1

* Estimated on basis of 10 months actual experience

NEW ZEALAND PORTS PROJECT

Auckland Harbor Board

Statement Showing Income and Expenditures
Actual 1957/58 to 1961/62
Estimated 1962/63 to 1966/67
(£ 000)

	Actual Year Ending September 30					Estimated Year Ending September 30				
	1958	1959	1960	1961	1962	* 1963	1964	1965	1966	1967
Operating Revenue										
Port Installations and Services	1,324	1,188	1,250	1,462	1,324	1,350	1,647	1,680	1,714	1,835
Cargo-Handling Plant	602	550	599	672	591	603	735	750	765	819
Electrical Energy	47	48	52	57	53	54	66	67	68	74
Miscellaneous	11	20	28	25	16	16	20	20	20	20
Total Operating Revenues	1,984	1,806	1,929	2,216	1,984	2,023	2,468	2,517	2,567	2,748
Operating Expenses										
Port Installations and Services	638	661	766	829	811					
Cargo-Handling Plant	378	355	382	404	432					
Electrical Energy	31	23	25	29	29					
Buildings, Machinery Plant	44	40	32	25	35					
Subscriptions and Gifts	15	8	6	9	10					
Engineering and Stores Unallocated	60	101	99	104	107					
General Administrative	157	160	174	186	197					
Operating Expenses Excluding Depreciation	1,313	1,348	1,484	1,586	1,621	1,718	1,821	1,930	2,046	2,169
Depreciation	202	262	259	244	284	277	289	301	314	328
Total Operating Expenses	1,515	1,610	1,743	1,830	1,905	1,995	2,110	2,231	2,360	2,497
Net Operating Revenues	469	196	186	386	79	28	358	286	207	251
Non-Operating Revenue	250	246	299	349	275	276	283	292	300	309
Non-Operating Expense	53	36	30	47	36	32	34	36	38	40
Net Non-Operating Revenue	197	210	269	302	239	244	249	256	262	269
Net Revenues	666	406	455	688	318	272	607	542	469	520
Interest on Long-Term Debt	223	247	274	292	312	339	369	409	444	484
Net Income	443	159	181	396	6	(67)	238	133	25	36
Operating Ratios (%)	76	89	90	83	96	98	85	89	92	91

* Estimated on basis of 10 months actual experience

NEW ZEALAND PORTS

Auckland Harbor Board

Statement Showing Balance Sheet Data
Actual as of September 30, 1962; and
Estimated as of September 30, 1963 to 1967, Inclusive
(£ 000)

Assets	Actual September 30 1962	Estimated As of September 30 1963	1964	1965	1966	1967
Current Assets						
Cash on Hand and in Banks	258					
Accounts Receivable	267					
Deposits	1					
Stores	142					
Prepaid Expenses	5					
Total Current Assets	673	433	508	467	307	303
Reserve Funds						
Deposit National Provident Fund	254					
Bank of New Zealand	6					
Government and Local Body Securities	544					
Sinking Funds 1/	611					
Total Reserve Funds	1,415	813	823	833	843	704
Fixed Assets						
Net Fixed Assets - End of Year	13,383	13,856	14,230	14,894	15,428	15,797
Buildings on Leaseholds - Realization	65	55	45	35	25	15
Total Assets	15,536	15,157	15,606	16,229	16,603	16,819
Liabilities						
Current Liabilities						
Accounts Payable	91					
Deposits	2					
Accrued Expenses	75					
Other	5					
Total Current Liabilities	173	173	173	173	173	173
Special Reserves	1,415	813	823	833	843	704
Buildings on Leaseholds - Realization	65	55	45	35	25	15
Long-Term Debt 1/	7,491	7,212	7,436	7,941	8,310	8,515
Capital						
Capital Accounts	5,892	6,644	6,794	6,953	7,118	7,282
Accumulated Funds	500	260	335	294	134	130
Total Capital	6,392	6,904	7,129	7,247	7,252	7,412
Total Liabilities	15,536	15,157	15,606	16,229	16,603	16,819

1/ Estimated data excludes sinking fund from Asset Reserve Funds and from Liability Long-Term Debt

NEW ZEALAND PORTS

Auckland Harbor Board

Statement Showing Estimated Cash Flow
Fiscal Years Ending September 30, 1963 to 1967, Inclusive
(£ 000)

	Estimated Financial Year Ending September 30						
	1963	1964	1965	1966	1967	Total	%
Cash Required							
Over-all Capital Program	750	750	900	900	900	4,200	
Debt Services							
Interest	339	369	409	444	484	2,045	
Amortization	268	270	292	316	333	1,479	
Total Debt Service	607	639	701	760	817	3,524	
Increase in Working Capital	-	75	-	-	-	75	
Appropriation of Invested Funds	-	10	10	10	10	40	
Total Cash Required	1,357	1,474	1,611	1,670	1,727	7,839	
Cash Available							
Decrease in Working Capital	240	-	41	160	4	445	6
Net Operating Revenues	23	358	286	207	251	1,130	15
Net Non-Operating Revenues	244	249	256	262	269	1,280	16
Depreciation	277	289	301	314	323	1,509	19
Transfer from Invested Funds	602	-	-	-	149	751	9
Loan Proceeds	600	600	750	750	750	3,450	44
Cash Available Beginning of Year	258	892	914	937	960		
Total Cash Available	2,249	2,388	2,548	2,630	2,711	8,565	109
Cash available end of Year	892	914	937	960	984		
Increase in Cash Position						726	- 9
						7,839	100

NEW ZEALAND PORTS

Lyttelton Harbor Board

Statement Showing Principal Financial Data, Actual and Estimated, and Principal Financial Ratios
(£ 000)

	Actual				Estimated				
	Year Ending September 30				* Year Ending September 30				
	1959	1960	1961	1962	1963	1964	1965	1966	1967
I. Principal Income Accounts									
Operating Revenues	668	709	816	794	788	858	885	914	939
Operating Expenses (incl. Depreciation)	446	484	445	533	532	534	549	565	582
Net Operating Revenues	222	225	371	261	256	324	336	349	357
Non-Operating Revenues	129	114	149	134	106	101	98	92	85
Net Revenues (Before Interest)	351	339	520	395	362	425	434	441	442
Interest	66	93	123	135	159	205	219	232	258
Net Income	285	246	397	260	203	220	215	209	184
II. Principal Balance Sheet Data				As of September 30					
Current Assets				319	640	695	756	822	900
Investments (Reserve Funds)				2,606	2,009	1,818	1,632	1,704	1,784
Net Fixed Assets				4,235	4,975	5,653	6,232	6,812	7,683
Total Assets				7,160	7,624	8,166	8,620	9,338	10,367
Current Liabilities				77	78	79	80	81	82
Special Reserves				1,740	1,676	1,674	1,578	1,488	1,457
Long-Term Debt				3,141	3,578	3,915	4,177	4,700	5,552
Equity				2,202	2,292	2,498	2,785	3,069	3,276
Total Liabilities and Equity				7,160	7,624	8,166	8,620	9,338	10,367
III. Cash Flow Data					Year Ending September 30				
Cash Required					1,253	1,270	1,264	1,258	1,495
Cash Available					2,417	2,287	2,153	2,273	2,649
Cash Balance End of Year					1,164	1,017	889	1,015	1,154
IV. Ratios									
% Operating Expense of Operating Revenues	67	68	55	67	68	62	62	62	62
% Net Operating Revenues of Net Fixed Assets				6.2	5.1	5.7	5.4	5.1	4.6
% Net Revenues of Net Fixed Assets				9.3	7.3	7.5	7.0	6.5	5.8
Ratio Current Assets to Current Liabilities				4.1 to 1	8.2 to 1	8.8 to 1	9.4 to 1	10.1 to 1	11.0 to 1
Ratio Debt to Equity				49/51	52/48	54/46	54/46	56/44	60/40
Times Interest Earned				2.9	2.3	2.1	2.0	1.9	1.7
Debt Service Coverage				2.1	1.3	1.4	1.3	1.3	1.4

* Estimated on basis of 11 months actual experience.

NEW ZEALAND PORTS

Napier Harbor Board

Statement Showing Principal Financial Data, Actual and Estimated, and Principal Financial Ratios
(£ 000)

	Actual				Estimated				
	Year Ending September 30				* Year Ending September 30				
	1959	1960	1961	1962	1963	1964	1965	1966	1967
I. PRINCIPAL INCOME ACCOUNTS									
Operating Revenues	230	257	302	314	327	329	342	356	368
Operating Expenses (incl. Depreciation)	119	163	172	152	188	159	191	171	206
Net Operating Revenues	111	94	130	162	139	170	151	185	162
Net Revenues (Before Interest)	161	154	199	229	204	218	201	235	213
Interest on Long-Term Debt	61	66	68	68	69	58	39	39	35
Net Income	100	88	131	161	135	160	162	196	178
II. Principal Balance Sheet Accounts				As of September 30					
Current Assets				245	183	101	86	118	170
Reserve Funds				121	125	130	50	53	55
Sinking Funds				235	280	12	8	49	91
Net Fixed Assets				2,511	2,622	2,882	3,097	3,220	3,214
Total Assets				3,112	3,210	3,125	3,241	3,440	3,530
Current Liabilities				31	31	30	30	30	30
Reserves				418	405	142	58	102	146
Long-Term Debt				1,475	1,451	1,245	1,246	1,284	1,225
Equity				1,188	1,323	1,708	1,907	2,024	2,129
Total Liabilities and Equity				3,112	3,210	3,125	3,241	3,440	3,530
III. Cash Flow Data									
Cash Required					271	737	482	395	257
Cash Available					419	833	599	500	341
Cash Balance End of Year					148	96	117	105	84
IV. Ratios									
% Operating Expenses of Operating Revenues	52	63	57	48	57	48	56	48	56
% Net Operating Revenues of Net Fixed Assets				6.5	5.3	5.9	4.9	5.7	5.0
% Net Revenues of Net Fixed Assets				9.1	7.8	7.6	6.5	7.3	6.6
Ratio Current Assets to Current Liabilities				7.9 to 1	5.9 to 1	3.3 to 1	2.9 to 1	3.9 to 1	5.7 to 1
Ratio Debt to Equity				51/49	47/53	42/58	39/61	38/62	35/65
Times Interest Earned				3.4	2.9	3.8	5.1	6.0	6.1
Debt Service Coverage				1.6	1.3	1.1	1.1	1.0	1.0

* Estimated on the basis of 11 months actual experience

NEW ZEALAND PORTS

Timaru Harbor Board
Statement Showing Principal Financial Data
(£ 000)

	Actual				Estimated				
	Year Ending September 30				* Year Ending September 30				
	1959	1960	1961	1962	1963	1964	1965	1966	1967
I. Principal Income Accounts									
Operating Revenue	159	163	187	183	187	192	245	249	252
Operating Expenses (incl. Depreciation)	101	108	107	128	139	144	176	178	184
Net Operating Revenues	58	55	80	55	48	48	69	71	68
Net Revenues (Before Interest)	131	130	157	134	125	120	130	141	138
Interest on Long-Term Debt	14	14	19	32	39	43	53	64	61
Net Income	117	116	138	102	86	77	86	77	77
II. Principal Balance Sheet Accounts					As of September 30				
Current Assets				85	75	75	75	75	75
Investments (Reserve Funds)				406	371	136	145	148	152
Net Fixed Assets				1,965	2,103	2,608	2,813	2,873	2,883
Total Assets				2,456	2,549	2,819	3,033	3,096	3,110
Current Liabilities				40	37	20	18	21	25
Special Reserves				314	317	132	141	145	149
Long-Term Debt				809	830	1,052	1,102	1,185	1,126
Equity				1,293	1,365	1,615	1,682	1,745	1,810
Total Liabilities and Equity				2,456	2,549	2,819	3,033	3,096	3,110
III. Cash Flow Data					Year Ending September 30				
Cash Required					352	605	356	289	227
Cash Available					800	1,169	999	970	963
Cash Balance - End of Year					448	564	643	690	736
IV. Ratios									
% Operating Expenses of Operating Revenues	64	66	57	70	74	75	72	71	73
% Net Operating Revenues of Net Fixed Assets				2.8	2.3	1.8	2.5	2.5	2.4
% Net Revenues of Net Fixed Assets				6.8	5.0	4.6	4.0	4.0	4.8
Ratio Current Assets to Current Liabilities				2.1 to 1	2 to 1	3.75 to 1	4.2 to 1	3.6 to 1	3 to 1
Ratio Debt to Equity				38/62	38/62	39/61	41/59	40/60	39/62
Times Interest Earned				4.2	3.2	2.8	2.6	2.2	2.3
Debt Service Coverage				2.3	2.0	2.5	2.7	1.6	1.6

* Estimated on basis of 11 months actual experience

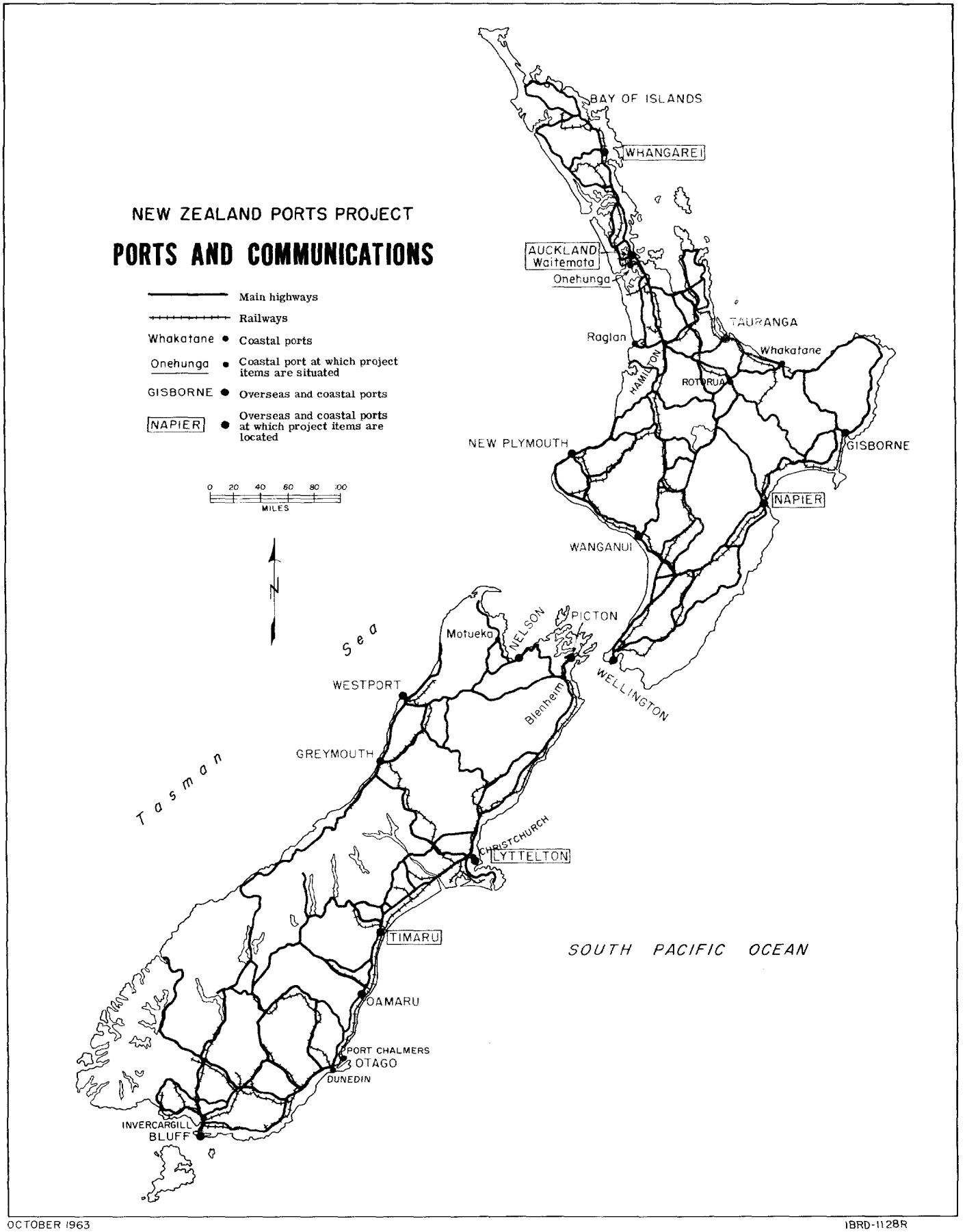
NEW ZEALAND PORTS

Whangarei Harbor Board

Statement Showing Principal Financial Data, Actual and Estimated,
and Principal Financial Ratios
(£ 000)

	Actual				Estimated				
	Year Ending September 30				* Year Ending September 30				
	1959	1960	1961	1962	1963	1964	1965	1966	1967
I. Principal Income Accounts									
Operating Revenues £	53	53	64	68	103	521	986	1,023	1,081
Operating Expenses (incl. Depreciations)	32	41	50	54	78	424	462	519	530
Net Operating Revenues	21	12	14	14	25	97	524	504	551
Net Revenues (before interest)	46	38	43	65	77	129	561	546	598
Interest on Long-term Debt	24	27	29	40	51	65	68	243	244
Net Income	22	11	14	25	26	64	493	303	354
II. Principal Balance Sheet Accounts									
Current Assets				166	225	253	411	192	227
Investments (Reserve Funds)				-	-	45	135	225	368
Sinking Funds				18	20	28	48	74	100
Net Fixed Assets				1,517	2,973	3,999	4,160	4,251	4,348
Capitalized Preliminary Loan Expenses				74	173	360	530	580	580
Total Assets				1,775	3,391	4,685	5,334	5,322	5,623
Current Liabilities				80	54	60	92	102	103
Reserves - Sinking Fund				18	20	28	48	74	100
Long-Term Debt				1,411	3,034	4,279	4,580	4,519	4,430
Equity				266	283	318	614	627	990
Total Liabilities & Equity				1,775	3,391	4,685	5,334	5,322	5,623
III. Cash Flow Data									
Cash Required					1,647	1,493	927	992	782
Cash Available					1,828	1,704	1,239	1,132	962
Cash Balance - End of Year					- 181	211	362	140	180
IV. Ratios									
% Operating Exp. of Operating Revenues	60	77	78	79	76	81	47	50	49
% Net Operating Revenues of Net Operating Fixed Assets				1.1	0.9	2.6	13.4	12.6	13.4
% Net Revenues of Total Net Fixed Assets				4.3	2.6	3.2	13.5	12.8	13.8
Ratio Current Assets to Current Liabilities				2.1 to 1	4.2 to 1	4.2 to 1	4.5 to 1	1.9 to 1	2.2 to 1
Ratio Debt to Equity				84/16	91/9	93/7	88/12	88/12	81/19
Times Interest Earned				1.6	1.5	2.0	8.3	2.2	2.5
Debt Service Coverage				1.0	1.1	2.0	4.1	1.4	1.7

* Estimated on basis of 11 months actual experience.



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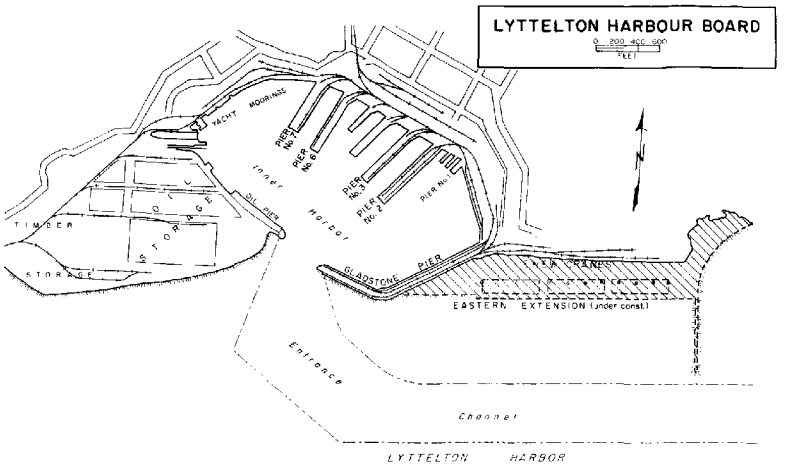

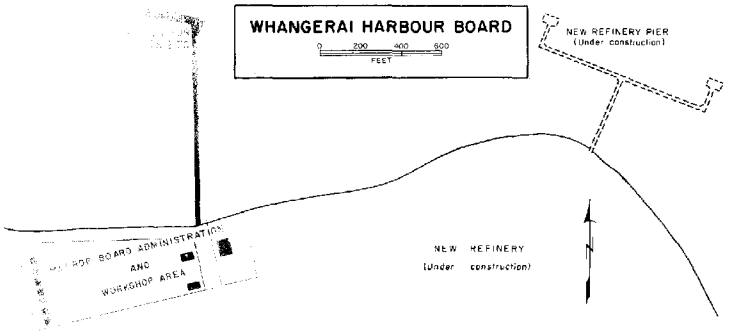

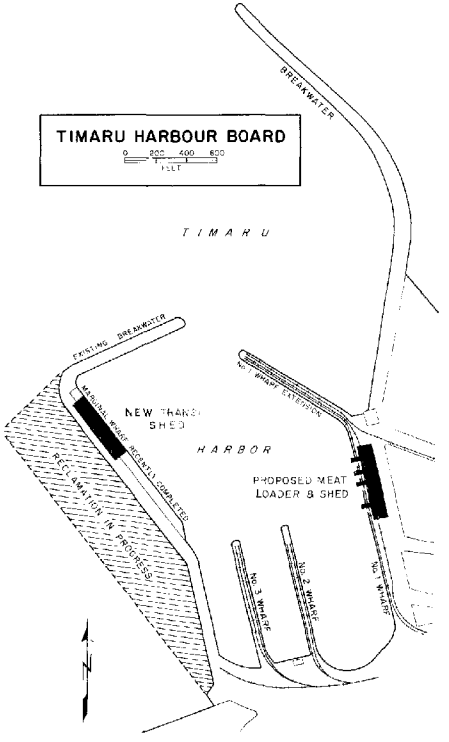

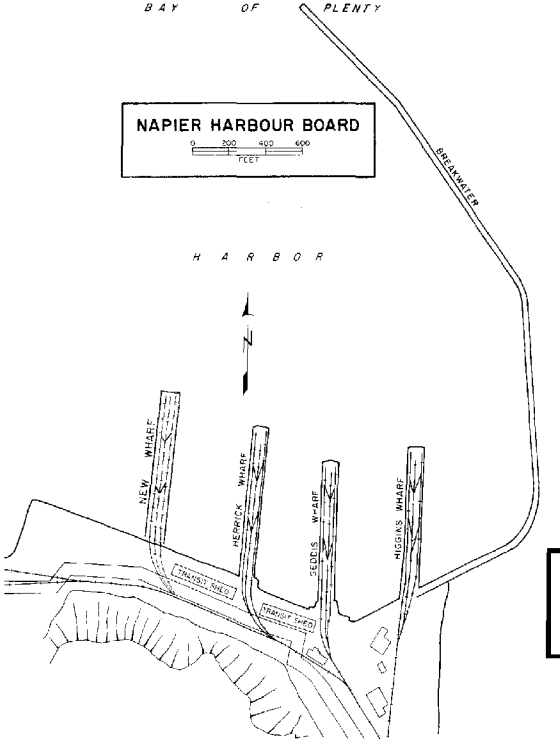

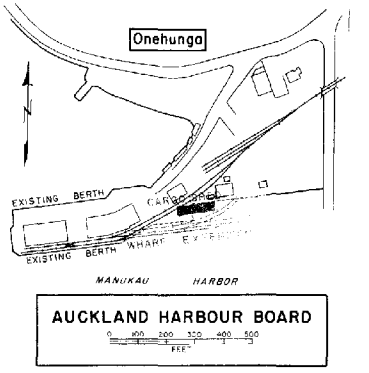

NEW ZEALAND PORTS PROJECT
PROJECT ITEMS